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OLD AND NEW KNOWLEDGE OF IMMUNITY *

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Our understanding and conceptions of disease in general have been influenced greatly by the results of the study of the phenomena of immunity, and it will be of interest to look back on the development of our knowledge of immunity particularly from that point of view.

The history of immunology may be divided conveniently into two periods, the premicrobic, from remote times to about 1880, and the microbic or modern period, from 1880 and down to our day.

That certain infections and intoxications may confer immunity was observed early, and efforts seem to have been made long ago to use this fundamental principle for preventive as well as curative purposes. It is said that, long before the Christian era, African peoples let snakes bite children in order to protect them against bites by venomous snakes; furthermore, that victims of snake bites were given the poison glands of snakes to eat, a procedure that may have had its basis in conceptions of an active immunization more or less analogous to the general ideas underlying our vaccine treatment. Mithridates VI, king of Pontus, is said to have made himself immune against poisons of all kinds by the constant use of what was regarded as antidotes; and the universal antidote ascribed to him and called mithridate, a form of which survived for centuries as the theriac of the pharmacies, contained among its many ingredients viper flesh, because viper venom was used as an arrow poison, and duck blood, because the duck was resistant to poisons. We have here a further example of an effort to secure protective immunity according to the principles of active as well as passive immunization.

That an attack of smallpox leaves the patient safe from further attack was no doubt observed very early also, because centuries ago the Chinese and other Eastern peoples inserted smallpox matter into the nostril in order to provoke a milder attack of smallpox than the natural, but with the same protection for the future. This is the real basal experiment in protective inoculation against infectious disease, and it prepared the way for other efforts in this direction. Later the Turks, from whom Lady Montague in the beginning of the eighteenth century learned of inoculation of smallpox, inserted the smallpox matter under the skin on the point of a sharp needle, also in order to produce a mild attack and thus render the subject proof against the disease.

In the meantime, Sydenham, the founder of modern nosography, had established by clinical observation the great principle that diseases differ in course and symptoms as well as in modes of spreading, thus taking up again the thread, long dropped, that leads back to Greek medicine. He described smallpox in masterly fashion, separated measles and scarlet fever from other eruptive diseases, whooping cough from influenza and noted that in all acute diseases and in most chronic, there is something peculiar, "something divine," that never can be learned by examination of cadavers. Sydenham recognized in quinin a specific remedy for malaria, and as a natural consequence of his conception of diseases as separate entities he fully expected that other specific remedies would be found; he had no doubt that the creator had made specifics for all the most important diseases.

The clearest and also one of the earliest general statements that the immunity characteristic of acute infectious diseases is specific was made by Thomas Fuller in 1739: "The chickenpox can never breed smallpox, nor the smallpox the measles, nor they the chickenpox, any more than a hen can breed a duck, a wolf a sheep, or a thistle a fig, and therefore one sort cannot be preservative against any other sort."

By this time the idea of protective inoculation was in the air. In 1758, Home in Edinburgh inoculated measles "to render this disease more mild and safe, in the same way the Turcks have taught us to mitigate smallpox," but his results were indecisive. The idea that immunity against pest could be secured by attenuated pest poison was expressed clearly by Weszpremi in Hungary and Somoilowitz in Russia, both of whom attempted inoculations against pest. In 1796, Erasmus Darwin, the grandfather of Charles Darwin, wrote: "No one could do an act more beneficial to society, or glorious to himself, than by teaching humanity how to inoculate this fatal disease; and thus deprive it of its malignity. Matter might be taken from the ulcers in the throat, which would probably convey the contagion. Or warm water might be put on the eruption, and scraped off again by the edge of a lancet. These experiments could be attended with no danger and should be tried for the public benefit, and the honor of medical science."

Of course, the outstanding and culminating event in the premicrobic period is the experimental demonstration by Jenner in 1796 of truth in the statement by the dairy maid: "I cannot take smallpox, for I had the cowpox." A harmless yet wonderfully effective way of preventing smallpox had been found.

* Abstract of the Noble Wiley Jones Lectures, June, 1920, University of Oregon Medical School, Portland, Ore.

THE PERIOD BETWEEN JENNER AND PASTEUR

While no new discoveries of fundamental significance occurred until about eighty years later, when Pasteur showed that chicken cholera and anthrax may be prevented by the injection of the attenuated bacteria that cause these diseases, respectively, and that hydrophobia may be prevented by the injection of the attenuated virus even after the receipt of the infection, these years were by no means sterile in ideas or observations bearing on immunity.

In the first place, Jenner and a little later Bryce made beautiful and convincing demonstrations of the fact that smallpox and cowpox immunity is associated with a definite change in the way in which the body reacts to the specific smallpox virus. Jenner, in 1798, after inoculation of smallpox matter in a woman who had had cowpox thirty-one years before, observed that "an efflorescence of a palish, red color soon appeared about the parts where the matter was inserted, and spread itself rather extensively, but died away in a few days without producing any variolous symptoms." Jenner then comments as follows: "It is remarkable that variolous matter, when the system is disposed to reject it, should excite inflammation in the part to which it is applied more speedily than when it produces smallpox. Indeed, it becomes almost a criterion by which we can determine whether the infection will be received or not. It seems as if a change which endures through life has been produced in the action or disposition to action in the vessels of the skin; and it is remarkable, too, that when this change has been effected by the smallpox or the cowpox, the disposition to sudden cuticular inflammation is the same on the application of variolous matter." This, as far as I know the first, description of the specific change in reactivity that accompanies immunity, although printed in Jenner's Inquiry into the Causes and Effects of the Variolae Vaccinae etc., remained wholly unnoticed until long after Pirquet, in 1902, independently rediscovered the phenomenon and gave to the condition the name of allergy. In passing I may mention that Bryce, a few years after Jenner, clearly described the more rapid evolution of the skin changes on revaccination of the recently vaccinated. Bryce accepted this increased activity as proof that the primary vaccination had taken. Bryce's observation also passed unnoticed and had no influence on the investigations of immunity. Even today, many physicians are not aware of the fact that an early immediate reaction on revaccination indicates the persistence of a degree of immunity.

In the period between Jenner and Pasteur there were also interesting foreshadowings of our chemotherapy and vaccine treatment.

Infectious diseases were regarded by some as the result of poisons for which complete antidotes harmless to patients should be found; by others, infectious diseases were regarded as caused by minute living things, and it was urged that substances be found to destroy the microbes without in any way harming the patient. Indeed, Eisenmann developed a complete program with all the experimental details necessary to carry out the investigations to find such substances.

About 1830 there was a revival of the sort of treatment illustrated by that of venomous bites with serpent flesh and poison glands, with extension to infections and other diseases. This is the isopathy of Lux. Extract of smallpox matter, variolin, was given by mouth in smallpox; of cancer, cancroin, in cancer; of diseased liver, hepatin, in liver diseases, etc., including foot-sweat in sweating of the feet. In fact, it was believed that the best results were obtained when autogenous remedies of this sort were used. Isopathy is now forgotten completely, and such no doubt will be the fate of much of the crude so-called autovaccines of our day. Both were based on the old notion, variously expressed, that certain diseases bring with them the elements essential for their cure.

DEVELOPMENT OF NOSOGRAPHY IN THE EARLY PART OF THE NINETEENTH CENTURY

Remarkable as the insight into the laws of immunity and the significance of certain immune phenomena, illustrated in the foregoing, certainly appears to have been, it is true, nevertheless, that facts and considerations relating to immunity probably did not exercise as much influence as one might expect they would have on the growth and general acceptance of the idea of the individuality of diseases and on the recognition of disease entities.

At this point let me recall the rapid development of scientific nosography in the earlier part of the nineteenth century. In the first place, Bichat separated organ diseases into the diseases of the distinct structures composing the organs. Then Laënnec, the father of auscultation, by comparison and correlation of the signs and symptoms observed in life with the results of careful examination after death, gave us a series of new morbid entities that we regard as classical, his greatest achievement being his recognition as an entity of tuberculosis in its various forms. Louis and Bretonneau independently by similar methods identified typhoid fever, and Bretonneau did this service for diphtheria also. In Dublin, Graves, Stokes and others described "new" diseases to which their names still are attached, and the same is true of Addison, Bright and Hodgkin in London.

Bretonneau especially was impressed by the specificness of disease. It is the specificness of the inflammation, he said, that determines the duration and gravity of most of the pyrexias, but the particular element, that mysterious *quid divinum* of Sydenham that separates one disease from another and determines the peculiar course of each, escapes observation.

But in Germany the conception of specificness of diseases and its consequences encountered strong opposition, especially from Wunderlich and Virchow, who ridiculed Sydenham's ideas about individual diseases and specific treatment. Fallacies arose, notably Virchow's doctrine of the duality of tuberculosis, the confusion in regard to croup and diphtheria, and Hebra's identification on anatomic grounds of variola and varicella. Certainly the last error would have been avoided, had attention centered on the specificness of the immunity in these two diseases.

Bretonneau's great pupil Trousseau upheld with remarkable insight the nosographic method, and stated that diseases owe their special characteristics, not to the quantity, but to the quality of the morbific agent to which the body responds with specific phenomena. Whenever a definite disease is discovered, the search for its cause, the effort to trace the relations of the phenomena can begin.

And now a wonderful light centered itself on the very heart of the problem by Pasteur's overthrow of the theory of spontaneous generation and the discoveries of the most frequent specific factors in disease, namely, the minute infectious agents.

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THE MODERN PERIOD IN IMMUNOLOGY

The microbic or modern period in immunology begins with the memorable demonstrations by Pasteur that specific immunity may be produced by the injection of the demonstrated agents of infectious diseases, even if artificially attenuated or changed so as to be fully harmless. That Pasteur regarded this work as an effort at further progress on the road first pointed out by Jenner is indicated by the fact that he called his procedures vaccinations, and the materials injected vaccines.

The advent of microbiology and Pasteur's immunization with known infectious agents made possible the experimental and comparative study of the mechanisms of infection, of the cure of infection, and of natural and acquired immunity that now was undertaken. It was recognized that all the fundamental problems in infectious etiology are not solved by the discovery of the specific agent, essential as that step must be; it still remains to explain how normal function and structure are disturbed by the entrance of the infecting agent, and how recovery and subsequent immunity are brought about.

We know now that there are two chief forms of immunity: (1) the antitoxic, of which diphtheria and tetanus furnish the best examples, and which depends, at least in the acquired and induced forms, on the neutralization of toxins by specific antitoxins, and (2) the antimicrobic, which seems more complex and is associated with phagocytosis and intracellular destruction of microbes as well as extracellular destruction or lysis. Analysis has revealed that these various effects depend on the presence in the body of substances with limited and specific affinities—antitoxins, opsonins, immune bodies or amboceptors—that are produced by the cells as the body becomes immunized, and furthermore, that associated with more or less well marked immune states are conditions and substances that produce various other specific reactions, such as agglutination, precipitation, complement fixation and cutaneous reactions, all being so-called immune reactions or antigen-antibody reactions, many of which have been put to practical service in diagnostic tests now in daily use everywhere.

It was soon found also that immune reactions are not limited to infectious agents and their products, but may be set in motion by a great variety of protein substances, whether primarily toxic or practically harmless, if introduced into the interior of the body as such (uncloven). Serum disease, specific laking of red corpuscles, specific precipitation and complement fixation, reactions that can detect the particular kind of minute traces of proteins otherwise unidentifiable, as well as the phenomena of anaphylaxis and allergy, are all examples of the wonderful capacity of the animal body to react in diverse but always specific manners against foreign protein substances. Indeed, immunity against infection may be regarded as merely a special instance of the power of the body by special mechanisms to rid itself of harmful foreign proteins. Curative and preventive serum treatment, antitoxic and antimicrobic; protective inoculations of all kinds; vaccine treatment; and all the specifically diagnostic serum reactions rest on this power of the body. And it is particularly interesting that the means essential for cure supplied by the infection itself, notions of the existence of which arose so long ago, is the faculty of the infectious agent to stimulate the cells of the body to produce specific antibodies, a faculty shared with foreign proteins in general, all such proteins being described from this point of view by the term antigens.

An individual once thoroughly influenced by the entrance into the body of an antigen, whether infectious and hence living, at least at the time of entrance, or noninfectious, becomes changed and may remain so even after all trace of the antigen has disappeared. This change may manifest itself in various ways: (1) Free antibodies, such as agglutinins, antitoxins and others, may continue in excess in the blood, and we obtain then positive agglutination test, negative Schick test, etc., as the case may be. Or (2) the change may manifest itself especially in an increased rate of antibody production on reentrance of the same antigen. In this case the wavelike course described by the newly formed antibodies as they accumulate in the blood may reach the crest in three or four days, or sooner, whereas in an individual not previously influenced by this particular antigenic protein, the wave would reach its highest point only after a longer time, usually in from eight to twelve days. In both these cases there would be more or less immunity; the corresponding infectious agent or toxin, if introduced in not too large amounts, might be destroyed or neutralized so promptly that no symptoms would have time to develop. (3) In other cases, on reintroduction of the antigen, there might be more or less extensive acute reactions, sometimes of great violence, more commonly of moderate severity or largely local. I have in mind now certain phenomena that are familiar to us under the terms of allergy, anaphylaxis, sensitization and hypersensitiveness. We have learned in the course of recent years that various noninfectious proteins may cause diseases in human beings under these conditions. (4) Finally, I would point out that, in the immune, reinfections may run a more or less atypical or modified course. Of this influence of immunization, varioloid is perhaps the most striking example; but gonococcal and typhoid reinfections also present peculiarities, and in tuberculosis the effect of early infection on the course of reinfection later is one of the large problems. In syphilis the precise effect of varying grades of immunization of the body by the presence of the spirochete on the course of the disease is not yet open to investigation on account of technical difficulties, but undoubtedly this is a field that some day will yield interesting and valuable results.

The noninfectious human diseases that are caused by the entrance of antigenic substances and in which we have good reasons to believe that antigen-antibody reactions play an important part, with the possibility that other mechanisms not yet understood also come into play, include serum disease, hay-fever, certain forms of asthma, some skin manifestations, and the so-called food idiosyncrasies. In these conditions an abnormal sensitization, a relatively incomplete immunity, is regarded as an essential factor, although in many instances the manner in which the allergic or hypersensitive state developed may remain altogether obscure. As in many cases of this kind definite hereditary tendencies are present, the condition being also frequently an abnormal reactivity to several different substances—multiple sensitization—it may concern hereditary constitutional peculiarities, the exact nature of which seems obscure and complex. The fact that hereditary anomalies of reactivity, of protein digestion and absorption may exist is not of itself any more remarkable than many other constitutional anomalies.

That foreign proteins easily may pass unchanged from the digestive tract into the blood in infants is indicated by the results of the studies in regard to the appearance of egg-white in the urine after being fed to the newborn. In a recent series of observations in which I was interested, egg-white was found in the urine by the precipitin test in a considerable number of cases. In its passage through the body in this way the foreign protein may leave behind an altered state by virtue of its stimulation of the centers for antibody formation.

In the further study of the diseases in which noninfectious proteins seem to be the exciting agents, the use of antigen-antibody reactions in vivo and in vitro will continue to be of great value on account of their specificness. Fuller said of infectious diseases that "the attack of one sort cannot be preservative against any other sort," and in the enlarged immunology of the present it is a cardinal principle that a particular antigen will induce the body to form antibodies anew that act only on that particular antigen. As most of the antigens concerned in disease are mixtures of many antigenic substances, the corresponding antigen-antibody reactions on superficial consideration may appear less specific than they actually are. No doubt, immunologic specificness depends on chemical structure—in other words, it is a chemical specificness; but we are still so ignorant of what actually happens in the immune reactions that we hardly dare to think of them merely as reactions of ordinary structural chemistry.

SPECIFIC ETIOLOGY

The establishment of microbic etiology settled for all time that there are specific diseases due to specific causes. The pioneer nosographers, Sydenham, Bretonneau, Trousseau, were right—they had seen the truth. The *quid divinum* of Sydenham that gives to a disease its peculiar course, combination of symptoms, and lesions now assumed a tangible form in the case of many of the most common diseases, and clarity took the place of vagueness and speculation in the conception of disease. A thorough revision of the ideas and knowledge about the diseases in the infectious group began. The tuberculosis processes were reunited under one cause; diphtheria was clearly defined and subjected to specific treatment; the typhoidal and dysenteric diseases were differentiated; and eventually syphilis and the so-called parasyphilitic diseases were gathered into one etiologic unit subject to the same therapy, not to mention many other diseases subjected to a similar clarification. Specific etiology provided a solid and reliable basis for the development of scientific nosography and of specific treatment, and in this development immunologic methods and principles are of special value, because by their aid it is possible to trace the relations of microbic varieties to particular infections and their treatment more minutely and more accurately than in any other way now open. This is due to the specificness of the antigen-antibody reactions of which I have spoken.

These reactions, detecting, as no other means can detect, differences in the constituent proteins, have revealed differences within important bacterial groups not suspected on account of the apparently basic relationships indicated by the morphologic, cultural and, other characteristics. As results of the increasing differentiation of infectious bacteria in which immunology is playing the chief part, we now know that epidemic meningitis may be associated with different strains of meningococci, each requiring a special antiserum; that the pneumococci long looked on as homogeneous consist of four main groups or types that are regarded as immunologically distinct and of different significance from the pathogenic and epidemic points of view; that typhoid fever formerly included several diseases caused by different bacteria of the same general group; and that other bacteria, such as the gonococcus, the diphtheria bacillus and the influenza bacillus also appear to fall into more or less well defined antigenic groups, the influenza group including at least two wholly distinct nosologic types, *B. pertussis* and *B. influenzae*.

THE GROUP OF STREPTOCOCCI

Perhaps a slightly more extended discussion of the streptococci from this point of view may be of interest.

This is probably the largest group of pathogenic bacteria; at any rate no other group seems capable of such varied types of activity. Streptococci are the cause of erysipelas, and the principal cause of puerperal fever, local infections and septicemia; in chronic diseases they invade the body and are found in the interior of at least one third of all bodies after death; acute articular rheumatism may be a streptococcus disease, and chronic forms of joint and other infections associated with foci in the tonsils and about the teeth are attributed mostly to streptococci, which are prominent also in many acute infectious diseases, notably smallpox, scarlet fever, measles, epidemic poliomyelitis, diphtheria and influenza; and the view that some of these diseases are caused by streptococci still must be reckoned with. Finally, streptococci may appear as the cause of epidemic infections, principally milk-borne, as in the case of epidemic sore throat, or principally contactual, as in the bronchopneumonia of measles and influenza.

The problem is: Is one pathogenic streptococcus responsible for all these diverse infections, or are we dealing with a group of distinct organisms?

If we look back on the history of streptococci, we find that from 1881, when they were discovered by Ogston and by Rosenbach, to about 1903 they were regarded as practically the same; at any rate, no fixed varieties were established. In 1903, the distinction into hemolytic and nonhemolytic was first made, a division that now is generally accepted, having been found to correspond to differences in pathogenic as well as immune reactions.

The next question is, Are there distinct kinds of hemolytic and nonhemolytic streptococci?

Nonhemolytic streptococci are being found with such frequency in rheumatism, in certain forms of endocarditis, in measles, in epidemic poliomyelitis, in rubella, in influenza, in chorea, and probably also in epidemic (lethargic) encephalitis, that they might be regarded either as secondary invaders or possibly as primary causative agents. While they are not separable into clean-cut subgroups by cultural, morphologic, biochemical characteristics or pathogenic effects in animals, their immune reactions show that there are distinct varieties. In epidemic poliomyelitis, green-producing nonhemolytic streptococci that give specific immune reactions are present regularly in the central nervous system, and, according to Rosenow, treatment with specific antiserum against such cocci appears to give so favorable a result that, taking all the facts into consideration, they may be looked on either as the cause of the disease or as secondary invaders of such importance as to determine the outcome. And in measles and in

rubella, nonhemolytic streptococci with specific immune properties have been found by Ruth Tunnicliff to occur in the blood and elsewhere so early and so constantly that, if not primary agents, they are secondary invaders that enter the body in the very earliest stages of the diseases. Certainly the malignant endocarditis of slow course caused by nonhemolytic streptococci gives the impression of a distinct entity, and the streptococci in question should be studied with special reference to their specific nature.

Enough has been said to indicate definitely that whatever the actual relations of these nonhemolytic streptococci may be to diseases in which they occur, the group certainly is not homogeneous but consists of a number of varieties that offer attractive and important problems for investigation in which the methods of immunology will be of special value.

From the relations of hemolytic streptococci to the tonsils—their constant occurrence in the crypts and the reduction in their prevalence in the throat after tonsillectomy—the tonsils may be regarded as the great center for the growth and dissemination of what I would call endogenous streptococci, which we are prone to look on as always ready to take advantage of every opportunity to invade the body and develop virulence. The hemolytic streptococci in epidemic sore throat, in bronchopneumonia, in scarlet fever, and in other acute infections are, generally speaking, similar to the endogenous, being rather more virulent for rabbits.

Now how do such epidemic strains arise? Are they endogenous organisms that have broken away from the restraints imposed on them in health, or are they exogenous strains with distinct pathogenic properties? There seemed to be no prompt means of solving this problem until recently, when it was found that there are distinct immunologic groups among the hemolytic streptococci and that the hemolytic streptococci of scarlet fever and of erysipelas are both specific and separable from each other and from other hemolytic streptococci by immune reactions (Tunnicliff). In other words, definite members of this group of streptococci have become connected more closely with well defined human diseases than ever before.

That the hemolytic group of streptococci also is heterogeneous and contains not only merely opportunistic pathogenic agents, but very likely primary agents of specific diseases as well, opens wide the doors for advances in the epidemiology, nosography, diagnosis and treatment of streptococcus infections. Perhaps a return to strictly monovalent forms of serum treatment may yield better results than the cruder methods in vogue. In any event, I trust I have made it clear that by virtue of the specific relations between proteins and their antibodies which are the essence of immunity, results of significant promise are being obtained in the field of streptococcus infections, results that may "enlarge the history of disease and improve the art of physic."

Infant Deaths and Syphilis.—Syphilis is an important cause of infant death as well as of miscarriage and stillbirth. The essential factors in preventing syphilis among children are the discovery and proper treatment of adult carriers of the disease. Of course it is important to treat children who are infected; but since it is the infected adult and not the infected child who spreads syphilis, it is especially important that the infected adult be treated in order to prevent further spread of the disease.—M. Knowlton, *Pub. Health Rep.* **36**:2305 (Sept. 23) 1921.

OSTEOMYELITIS OF THE PELVIC BONES *

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The writing of this article was prompted, first, by the apparent paucity of the literature in regard to the subject (there exist comparatively few case reports) and, secondly, by the impression that is gained, by perusal of the literature, that the prognosis of this disease in the regions in question is extremely grave and often likely to be fatal. Bergman[1] compiled from the literature thirty-five cases of osteomyelitis of the pelvis and thus summarized them: healed, 11; died, 18; unknown, 6. He adds one case report of his own in which a radical operation was performed with good results.

The six cases reported here were observed since the close of the World War. There are, in addition, two cases which are now under observation for chronic osteomyelitis (not reported in this series). It would therefore seem that the disease is not as rare as is generally supposed.

Five of the six cases here reported occurred in children, which may account for the favorable prognosis. They all reacted promptly to proper surgical procedure (wide opening, liberal drainage and removal of sequestrums). Where the amount of bone involvement was not great, healing was prompt. In all of the cases, roentgen-ray findings were positive and of great diagnostic aid.

Etiologically, *Staphylococcus pyogenes-aureus* was found present at the time of operation in all of these cases. Three cases presented the history of trauma, while the other three presented the classical initial focus elsewhere.

The onset was sudden in four cases, and accompanied by chill and high temperature. In two cases, the onset was insidious. (Cases 5 and 6).

Of the cases here reported, three were of the ilium, two of the ischium, and one of the pubis. In only one case was there later joint involvement (hip joint, Case 3). All of the cases presented a definite leukocytosis (from 12,000 to 20,000).

OSTEOMYELITIS OF THE ILIUM

In the three cases of iliac affection, the pain complained of was in the hip and leg of the affected side. There was never any pain in the region of the iliac fossa, from which, in each instance, the pus was recovered.

The diagnosis of osteomyelitis of the ilium was made in these cases by the history, the character of the pain, and the definite roentgen-ray findings. The roentgenogram in these cases of iliac disease was characteristic. A mottled, moth-eaten appearance of the affected portion of the ilium was present in each case. On operation, there were two characteristic findings: (*a*) The pus was always found on the visceral side of the iliac bone, displacing the peritoneum. There was, in two cases, a very small amount of pus. It was therefore necessary in each case to trephine the ilium in several places before the pus could be reached.

* Read before the Section on Orthopedic Surgery at the Seventy-Second Annual Session of the American Medical Association, Boston, June, 1921.

1. Bergman: Resection of Ilium for Acute Osteomyelitis, Centralbl. f. klin. Chir.

(*b*) The amount of sequestration was small in each case, corresponding not at all to the amount of disease involvement as shown by the roentgen ray. In each case, liberal drainage and counterdrainage were established, and all three patients left the hospital cured. The conclusion to be drawn is that in osteomyelitis of the ilium, we shall very probably find the pus on the inner (visceral) side of the bone, and we must not hesitate to trephine in various places until we find the pus. This is a procedure which demands some, but not an undue, amount of care and skill.

REPORT OF CASES

Case 1.—J. F., a boy, aged 6, had been injured four weeks previously in falling from a swing. Three or four days later he became very sick. There was pain in the right hip and leg, and temperature as high as 103 F. At the time of examination, the temperature was 101 F. Tenderness was noted over the right ilium and a slight swelling, but no fluctuation (edema?). There was no limitation of motion to right hip. The roentgenogram revealed characteristic mottling of the outer flare of the ilium. An operation was performed four weeks after onset. About 2 or 3 c.c. of pus was found within the pelvic cavity. Liberal drainage was established, and a small sequestrum was removed. The leukocyte count was 20,000.

Case 2.—M. L., a girl, aged 6, had had influenza six months previously. She had been weak ever since. Six weeks previously, she had fallen downstairs and injured the left hip. Two days later she had a high temperature, and complained of severe pain in the left hip. No swelling or redness was noted but there was extreme tenderness in this region. The fever rose to 104 F. a few days after onset, then gradually went down to 101. The pain continued, being located chiefly in the left hip and leg. When the patient commenced to walk there was considerable limp and pain in the hip. There was considerable swelling around the left hip, especially in the gluteal region. Roentgen-ray examination revealed a distinctly mottled appearance of the left ilium (sequestration?). There was tenderness behind the anterior-superior spine over the wing of the ilium. The leukocyte count was 16,000. Six weeks after onset, an incision was made about 2 inches behind the anterior superior spine. The ilium was reached by means of blunt dissection. Some roughening and necrotic bone was found, but no pus. Thereupon, the bone was trephined, and a small amount of pus (1 or 2 c.c.) was found in the pelvic cavity, together with a fairly good-sized sequestrum. A drainage tube was inserted. Prompt healing followed.

Case 3.—E. P., a girl, aged 13½, was taken sick about one month previously, with chill and high temperature (104.5 F.). The onset was sudden. The patient was very sick for three days. Following this, the temperature went down somewhat, remaining about 101 or 102 F. The child had gradually lost in weight. She complained of pain in the right hip and down the right leg. There was some swelling of the entire gluteal region; also swelling in the right iliac fossa, which was somewhat fluctuating. The temperature was 100 F.; the leukocyte count, 15,000. The roentgenogram revealed characteristic mottling and extensive involvement of the ilium. On operation, it was necessary to trephine the ilium in order to reach the pus, which was present in large amount. A small sequestrum was removed. There was considerable roughened bone. Numerous cigaret drains were inserted. About one month later, the hip joint became involved, with another rise of temperature, necessitating arthrotomy at the hip joint. Following this, recovery was uninterrupted.

OSTEOMYELITIS OF THE ISCHIUM

Both of these patients were seen in the chronic stage of the disease. In one case there was a discharging sinus near the anus. One of them was diagnosed osteomyelitis of the upper end of the femur. The roentgenograms in both cases were distinctive, showing considerable destruction of the ischium and some sequestration. This roentgen-ray finding, combined with the general history of the case, made diagnosis easy. Operation in each case was performed with the patient in the lithotomy position. An incision was made directly over the ischium, the soft parts being separated by blunt dissection, and in each case a sequestrum of considerable size was removed. In one case (Case 4), healing was prompt, while in the other (Case 5) there still exists drainage.

Case 4.—A. N., a boy, aged 13, had four months previously complained of pain in the left leg. He was unable to get out of bed for six weeks. His temperature rose rapidly to 104 F., and there was continued intense pain in the left leg. After six weeks, the patient was allowed to get up and go about, although his temperature never went down to normal. On examination, the patient complained of pain in the left leg. He was unable to use the leg properly. There existed marked swelling about the left hip and thigh immediately below the hip joint. Atrophy of thigh and leg was noted. When viewed from behind, the entire gluteal region was markedly swollen and enlarged, about one and a half to two times its normal size. Fluctuation could not be made out. Flexion at the hip joint was considerably interfered with. All of the motions were normal.

The roentgenogram revealed considerable destruction of the ischium and sequestration. The leukocyte count was 15,000. On operation, an incision about 4 inches long was made over the body of the ischium. After the ischium was exposed, considerable necrotic bone was removed, also some pus. Prompt healing followed drainage.

Case 5 (seen at the University of Minnesota Hospital).—H. J., a boy, aged 11, about one year previously had had the right leg amputated for osteomyelitis of the tibia. Four months after this amputation, a sinus appeared near the anus on the left side. There had been no preliminary pain or discomfort. This sinus had been discharging ever since. Considerable tenderness was noted over the left ischium, and some swelling. There was a discharging sinus, from which came a small amount of pus. An undue amount of walking caused pain in the left leg. The leukocyte count was 12,000. The roentgenogram revealed considerable bone destruction of left ischium and some sequestration. On operating, a fairly good-sized sequestrum was removed. Since the operation, the patient's general health has improved, although the discharge has not ceased.

OSTEOMYELITIS OF THE PUBIS

Only one case was seen. This was secondary to a pus infection elsewhere. No particular discomfort was experienced, excepting marked tenderness over the pubis. The roentgen-ray findings, combined with the clinical findings, determined the diagnosis.

Case 6 (seen in consultation with Dr. Chowning).—A. P., a woman, aged 35, whose family history was negative, had had purulent discharge from the navel nine years ago. This sometimes stopped, only to return. On examination, April 23, 1921, there was considerable tenderness in the region of the umbilicus. The roentgen-ray examination revealed some bone destruction of the os pubis, on the right side. May 15, an exploratory abdominal incision revealed the pelvic organs. The intestines were free from tuberculous lesions. The line of adhesions extending from the lower end of the incision to the navel, probably indicated the cause of the purulent discharge of the navel. The incision extended out over the pelvis down to the bone. Operation by chisel and curet revealed about 1¼ inches of dead bone on the anterior surface of the pubis, with much softening and detritus below the surface of the bone. The cavity was curetted out about 1½ inches in length, and the width of a finger. It was then packed with iodin gauze, which was changed every other day for a week, and afterward with a wick saturated with compound solution of cresol. The wound closed on the sixteenth day, and the patient was discharged from the hospital on the eighteenth day.

Pillsbury Building.

THE THIRD YEAR IN INFANTILE PARALYSIS *

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In this paper will be analyzed 180 consecutive cases of poliomyelitis which occurred in 1916, since which time the patients have been under continued care in the clinic of the Harvard Infantile Paralysis Commission. Their cases have been analyzed with regard to the effect of treatment on the disease, and to the existence of any general laws governing either the recovery rate of different muscular groups or the behavior of the disease as a whole.

The patients are reexamined once in four months, the examinations including every available muscle group of both arms, both legs, back, neck, and abdomen. The degree of existing power is classified, and the muscles are grouped according to their voluntary power as follows: (1) normal; (2) good, when the muscle performs full function, and takes some resistance; (3) fair, when the whole arc of motion is performed, but very little resistance is required to overcome the movement; (4) poor, when there is some motion, but when complete motion cannot be accomplished against gravity; (5) trace, when there is muscular contraction but no motion in response to voluntary effort, and (6) gone, when there is no response in the muscle to voluntary contraction.

At the clinics, exercises are prescribed which are to be carried out at home, or they are given at the central clinic as the case may be. Operations are ordered when necessary, and apparatus is provided and supervised.

There are two phases of the report: (1) the general progress of the cases available for observation, through the whole three years, and (2) the behavior of the cases in the third year.

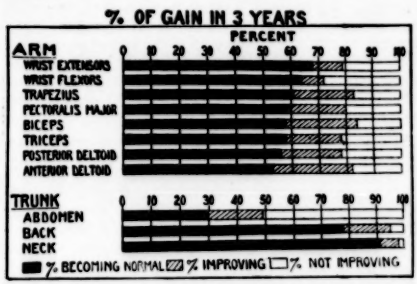

Chart 1.—Percentage of gain in three years.

I. PROGRESS FOR THE WHOLE THREE YEARS

The 180 cases represent those patients coming, in 1916, who were old enough for a thorough examination, and of whom we possess continuous records up to the end of the third year. Therefore, they are not selected cases. The average age at onset was between 3 and 4 years; and, on the whole, the cases in this group were of the severer type, because the patients with milder cases were less regular in their attendance at the clinic than were these, and many of them had been discharged.

Forty-five patients showed paralysis of the arms at the time of the first examination, and 175, paralysis of one or both legs. The abdomen was affected in 63.5 per cent., the back in 41.5 per cent., and the muscles of the neck in 25.5 per cent.

At the time of admission to the clinic, 15 per cent. of the children were too young to walk, and 37 per cent. of the others could not walk, making a total of more than 50 per cent. who did not walk at the time of admission. At the present time, all can walk; two, however, walk only a little. One of these has three times as much power as when he came, but has a complicating heart trouble, and the other one is in poor general condition, with tuberculosis. As the important factor in the treatment is the preservation and restoration of ultimate function, these figures show that with the modern treatment of poliomyelitis inability to walk would be a very infrequent and extraordinary result of infantile paralysis, and practically always preventable, except in cases of very severe paralysis of both arms and both legs.

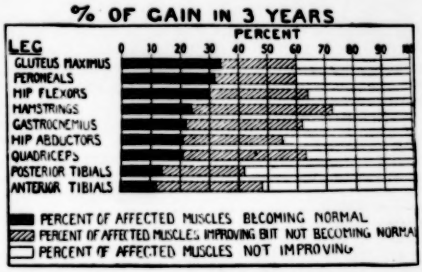

Chart 2.—Percentage of gain in three years.

The muscles in different parts of the body were studied separately, as the recovery rate appeared to differ greatly. Estimates on which statements are made are based on the power of the muscles in voluntary contraction as estimated in the examinations, and graded into the six classes to which reference has already been made. To pass from one grade to the next higher was counted as improvement: to drop a grade was counted as loss. Improved function in walking is not taken account of in this study, which is confined entirely to nonweight-bearing muscular strength.

The muscles of the back and neck improved most noticeably; and nearly all affected neck muscles returned to normal during the three years. More than 75 per cent. of all back muscles returned to normal; but the situation in the abdomen demands attention, as the outlook for improvement under treatment is less favorable than anywhere else in the body, except for certain muscles in the lower leg, which will be alluded to later. Only one half of the cases of abdominal paralysis showed improvement, and less than one third returned to normal. Considering how common this paralysis is; how frequently it is overlooked; how difficult it is to provide anything but strong exercises for these muscles, and how undesirable is permanent abdominal paralysis, these figures are important. It may be men-

* From the Harvard Infantile Paralysis Commission.

tioned incidentally, however, that complete abdominal paralysis in women is not an obstacle to child-bearing, certain adult patients of this type in my personal knowledge having been delivered of healthy children without difficulty.

The muscles in other parts of the body showed definite rates of improvement which must be taken into account in formulating the prognosis. This is shown by the charts. In the trunk muscles, Chart 1 shows the very unfavorable situation with regard to abdominal paralysis, and the very favorable situation with regard to paralysis of the neck.

In the arm, it will be seen that the average of improvement is much higher than in the leg, but gradually diminishes from the wrist to the shoulder, the least improvement occurring in the deltoid muscle, which in this analysis is separated into two parts, the anterior and the posterior part of the muscle.

The probability of the leg's becoming normal is about one-half that of the arm. The muscles vary greatly in their individual outlook, and the prospect of improvement, even in the most favorable muscles, falls below that prospect in the arm.

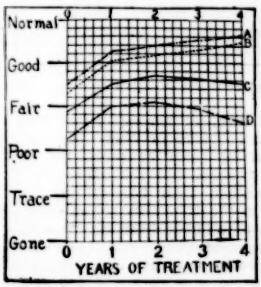

Chart 3.—Progress of the average affected muscles of the arms and legs in four years: *A*, lower arm; *B*, upper arm; *C*, upper leg, and *D*, lower leg.

The gluteus maximus offers the most favorable outlook for complete recovery among the muscles of the lower extremity: it is followed by the peroneals, the hip flexors, the hamstrings, the gastrocnemius, the hip abductors, the quadriceps, and the tibials, in the order named. The anterior tibial muscle presents the poorest outlook of any muscle in the body, and the posterior tibial presents nearly as poor an outlook. The comparative immunity of the peroneals and the much more favorable outlook for their recovery than exists in any other muscle below the knee is striking, and accounts for the frequency of valgus deformity in the late stages of the disease.

To summarize what has been said, all muscles show a tendency to improvement under treatment by muscle training and restricted walking, when analyzed from the beginning of the disease to the end of the second year. Many become normal; the best outlook is in the muscles of the back and neck; next it is in the muscles of the upper extremity, and the outlook in the abdominal muscles is worse than anywhere in the trunk and upper extremity. In the lower extremity, the whole outlook for improvement is very much worse, and, in general, diminishes from the hip to the foot. The generalization suggested by these figures is that the disease is known to be, in general, not only more frequent, but, on the whole, more severe, even from the outset, in the lower extremities than in the upper; and the chart dealing with the leg suggests that, on the whole, improvement or recovery is least, and improvement slowest, in those muscles which have the greatest amount of body weight to sustain in walking. The bad outlook in the abdominal muscles suggests that the continued stretching of the abdominal muscles is a most unfavorable factor.

II. THE BEHAVIOR OF THE MUSCLES IN THE THIRD YEAR

At the end of the second year, we come to a more or less stationary period, when spontaneous improvement has largely ceased, and when the outlook for further improvement under treatment is less favorable. In addition to this, the parents of patients have become tired of the routine necessitated by intensive treatment and have become lax in treatment. Deformities are becoming established, it is impossible in most cases to restrict activity to the proper limit, and one would expect on general considerations that progress at this time would be less favorable.

TABLE 1.—PROGRESS DURING THIRD YEAR IN PARALYSIS OF ARM

	Number	Per Cent.
Arms affected	35	100
Arms showing gain	13	37
Arms stationary	16	45
Arms showing loss	6	18
Analysis of Loss:		
Deformity	4	66
Overuse	1	17
Poor care	1	17

We pass now to a strict consideration of paralysis in the third year in patients under treatment. Chart 3 shows a most striking situation and indicates the progress of muscles affected during three years in the cases under consideration, with records of the fourth year added when available.

It will be seen in the chart at the outset the curve (*A*) of improvement for the lower arm begins higher than any of the other curves, rises rapidly through the first year, and then continues improvement up to the end of the fourth year. Improvement in the upper arm (*B*) is practically parallel to this, on a somewhat lower level. The upper leg chart (*C*) shows a distinctly lower level than either of the arm curves at the outset and throughout, but it is parallel to them up to the end of the second year. The lower leg (*D*) starts at a still lower level, is nearly parallel to the others in the first two years, but falls more sharply in the third and fourth year, falling even more than does the upper leg.

TABLE 2.—PROGRESS DURING THIRD YEAR IN PARALYSIS OF UPPER LEG

	Number	Per Cent.
Legs affected	252	100
Legs showing gain	49	20
Legs, stationary	127	50
Legs showing loss	76	30
Analysis of Loss:		
Deformity	33	44
Overuse	16	21
Poor care	3	4
Unexplained	24	6
Examinations vitiated by recent operations	20	25

In view of the fact that cases of paralysis of the upper and lower leg showed, on the average, a falling off in power in the third year, an intensive study of all cases was made to ascertain the causes of this falling off.

Of thirty-five arms still affected at the beginning of the third year, the behavior was: Eighteen per cent. showed a loss; 45 per cent. showed neither gain nor loss, and 37 per cent. showed a gain. The causes of the loss of power in the six cases constituting the 18

per cent. were: increasing deformity in the hand or shoulder in four cases, poor care at home in one case, and overuse in starting to walk on crutches in one case.

In the upper leg, in 252 cases, seventy-six, or 30 per cent., showed loss under treatment in the third year; 50 per cent. showed neither gain nor loss during this period, and 20 per cent. showed a gain. In analyzing the causes of loss in these cases, hip deformity was responsible for 38 per cent., deformity in the foot for 6 per cent., operations for 25 per cent., overfatigue in walking before the third year for 8 per cent., overfatigue in starting to walk 13 per cent., cases dropped from the clinic 4 per cent., and unexplained 6 per cent.

In classifying operations as a cause of loss, it is evident that, following operation, weakness will be evident in the muscles of the limb operated on, and, although a large proportion of these patients regained or increased their muscle power after the close of the third year, and nearly all improved in function, it is evident that the readjustment immediately following operation will show temporarily in a muscle examination technically as a loss, so that operation in any series of cases investigated in this way will show, in the months following operation, a change of function which must be classified as a loss. The operative results obtained in the commission's clinic are most satisfactory from a functional point of view and will be considered in a separate communication later.

TABLE 3.—PROGRESS DURING THIRD YEAR IN PARALYSIS OF LOWER LEG

	Number	Per Cent.
Legs affected	259	100
Legs showing gain	46	18
Legs, stationary	87	33
Legs showing loss	126	49
Analysis of Loss:		
Deformity	79	63
Equinus	4	
Calcaneus	1	
Valgus	13	
Varus	1	
Equinovalgus	24	
Calcaneovalgus	19	
Equinovarus	8	
Calcaneovarus	2	
Cavus	7	
Overuse	3	2
Poor care	2	2
Unexplained	3	2
Examinations vitiated by recent operations	39	31

The most interesting question of all relates to the behavior of the lower leg in the third year of treatment. Of 259 lower legs affected, 49 per cent., or one half, showed loss as defined by the examination of individual muscles in the third year; 33 per cent. were stationary, and 18 per cent. showed a gain. Increasing deformity was responsible for 63 per cent. of the loss, and was distributed as indicated in Table 3. It is interesting to notice in the table that of the seventy-nine cases of deformity, fifty-six of them showed an element of valgus, which is a comment on the tendency of the peroneal muscles toward gain in power. The loss in power was associated with operations in 31 per cent.; and many of these operations were astragalectomy, which, of course, resulted in an obliteration of mobility and muscular power in the ankle. The same consideration with regard to operations in the lower leg pertains, as in those mentioned, to the upper. Poor care was responsible for the loss in 2 per cent., it was unexplained in 2 per cent., and in 2 per cent. it was due to starting to walk.

The question of deformity is of much practical importance and interest. Although deformity is, in the majority of cases, preventable, it is not so in all. In a case of paralysis of the tibial muscle with strong peroneals, in the end, the foot will almost invariably be drawn into a position of valgus no matter what care we may give to it. With complete paralysis of the gastrocnemius and the persistence of the posterior tibial and the peroneals, a cavus or calcaneocavus is almost inevitable, while the paralysis of the peroneals and the continued pull of a strong anterior tibial will, in the end, generally result in a varus, so that in a certain number of these cases it is fair to assume that the deformity is inevitable. In a certain number of these cases, deformity was undoubtedly unnecessary and resulted from the fact that these cases were distributed over a large state; that the parents were, in a good many cases, careless; that apparatus got out of order, and directions were not faithfully carried out. In other cases, increasing deformity has been recognized and operation advised; but the parents have deferred operation.

Whatever the cause of the deformity as it was studied in the third year, an analysis was made to see in which direction the loss of power occurred and why it occurred. Sixty-one per cent. of the patients showed loss in both the contracted and stretched muscles; 29 per cent. showed loss in the stretched muscles and not in contracted ones, and 10 per cent. showed loss in contracted muscles only. Putting these groups together, it is of interest to note that 90 per cent. lost power in the stretched muscles, and 70 per cent. in the contracted muscles. In addition, therefore, to any unsightliness and impaired function caused by deformity itself, it is evident that there is a serious danger, especially to the stretched muscles, in allowing deformity to persist, and that the greater loss of power in deformity occurs in the stretched muscles.

CONCLUSIONS

The conclusions that may be drawn from this brief summary of a very large field are that infantile paralysis, affecting the upper extremity, is milder and more amenable to improvement and cure than that affecting the lower extremity. Muscles in the upper extremity, under the treatment described, improve continuously for four years, the improvement being most rapid in the first year, and in the lower extremity, improvement is also most rapid in the first year; but after the third year, there is a tendency toward a slight loss of muscular power, especially marked in the lower leg, under the best conditions of intensive treatment that can be afforded in a public clinic where the object of treatment is the prevention of deformity and the avoidance of fatigue, and where muscular reeducation is pursued throughout. The chief cause of this loss is deformity and deformity occurring in the lower leg.

The following causes tend to make recovery in the lower leg less favorable than elsewhere in the body, except in the abdominal muscles: (1) a tendency of the paralysis to be more severe from the start; (2) the frequent occurrence of deformity, and (3) the fact that in weight-bearing the greatest amount of strain is thrown on the muscles of the lower leg. The outlook in the tibials is particularly poor; and the more favorable condition in the peroneals explains the predominance of valgus deformity. Operation may temporarily diminish muscular power, and improved function occurs before the improvement in muscular power shown by a technical examination.

The lesson to be learned is that deformity is to be prevented by every means in our power, that the evidence shows that early weight-bearing is detrimental to weakened muscles, and that the keynote to treatment consists in the prevention of the stretching of paralyzed muscles and contraction of their opponents, the avoidance of fatigue in walking, and the preservation of a normal muscular balance between opposing groups so far as possible. With this closer analysis of the potential power of individual muscles to improve and the general laws formulated with regard to the behavior of individual muscles, it would seem that operation in a good many cases might be performed with benefit earlier than is now often done, and that one was safe in formulating the statement that deformity, stretching, and fatigue are the three worst enemies of good ultimate function in poliomyelitis.

234 Marlborough Street.

THE LOCAL AND GENERAL SERUM TREATMENT OF CUTANEOUS ANTHRAX *

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Various methods of treating anthrax have been employed for many years. Almost all the local measures in common use possess, however, too many disadvantages to be considered locally effective, and they are all without claim to a specific effect once an anthrax septicemia has developed. Many of them even have the danger of increasing the liability of this grave complication supervening.

The most desirable method of treatment is one which fulfils certain points. Thus, it should (1) be applicable to all forms and locations of the disease; (2) have the lowest mortality rate; (3) be as specific as possible; (4) entail no danger of generalizing the local disease; (5) produce the least amount of scarring and deformity; (6) possess a minimum of pain, and (7) entail the shortest absence from employment.

The thermocautery has been used and is still very often used either alone or in conjunction with other measures. It is an extremely painful procedure, and when the lesion is extensive, especially on the face or neck, it leads to hideous scarring and deformity. It destroys rather indiscriminately both dead and living tissues and, unless applied thoroughly, it may seal off from free drainage tissue which is still infective, and thus lead to generalization of the malady.

Chemical caustics, such as chlorinated lime, nitric acid, zinc chlorid, phenol (carbolic acid), mercuric chlorid and potassium hydroxid have also been used. These caustics are very painful and some produce pronounced scarring; they are, moreover, not in the least certain, and whatever slight specific action they have is exerted too superficially to be effective. Bacilli have been shown to persist for many days in an anthrax wound despite energetic cauterization. The tendency of some of them to produce acute inflammatory changes in the kidney, and even poisoning, must not be forgotten.

Surgical intervention comprises two forms: incision and excision.

Incision has fallen into disrepute in treating anthrax and justly so, for it is not only contraindicated but is actually dangerous. The operation breaks down the barrier zone to the infection which Nature has so carefully constructed, and it opens wide the blood and lymphatic channels of absorption at the same time failing to remove the infected focus. As a result, increased local involvement and grave danger of a septicemia originating are to be expected.

Excision has been the most commonly used method of treatment. It has been so often combined with serum or cautery that it is difficult to tell to which the results are mostly attributable. Excision, despite certain advantages over incision and thermo or chemical cautery, has certain outstanding limitations and disadvantages. In anthrax of the face or neck, it is objectionable from the esthetic point of view; and in any location, if the lesion is large, an extensive surface is left devoid of skin, requiring subsequent skin grafting to prevent scar formation. The pain of the operation and possible hemorrhages are also factors. Probably the most frequent source of danger is the difficulty of accurately defining the area to be excised, especially when the edema and induration are marked, as microscopic sections have at times shown bacilli far beyond the limits of the pustule in the edematous zones. To excise less than the entire area is to subject the patient to the pain and discomfort of the operation without a compensatory result in the way of a certain cure. On the contrary, Nature's barrier zone may be broken down and the blood and lymphatic channels opened, increasing the danger locally and generally of disseminating the malady. Since anthrax in man is primarily a local disease, any treatment which tends in the least to generalize the infection is scarcely to be looked on as a proper therapy.

Certain other means of treatment have been recommended locally, such as wet dressings and pulverization with antiseptics, the injection of antiseptic solutions of various kinds into the lesion, etc.; but such measures can only be considered palliative and secondary to a more specific method. Likewise, symptomatic treatment and rest, while useful adjuncts to any treatment, must be considered as palliative at best. Schwartz [1] collected statistics that are interesting in this connection: Of ten patients given symptomatic treatment and rest, nine died.

Various means of treatment supposedly more or less specific for the disease have been advised. Among these the most prominent are powdered ipecac paste, extract of *Bacillus pyocyaneus*, arsphenamin, and normal beef serum.

A few favorable statistics have been reported with ipecac and extract of *Bacillus pyocyaneus*, but their value has not been established and it is very questionable whether they have the least efficacy in the severer forms of the disease. Arsphenamin has experimentally been found of value by several investigators, and Becker [2] has reported a recovery in a septicemic human case. The results are encouraging, but the treatment is in its experimental stage. Recently, normal beef

* From the Kingston Avenue Hospital Bureau of Hospitals, Department of Health, New York City, Dr. R. J. Wilson, director; Dr. William T. Cannon, resident physician.

1. Schwartz, N.: Diagnosis and Treatment of Anthrax, New York M. J. **107**: 1171 (June 22) 1918.
2. Becker, C.: Deutsch. Ztschr. f. Chir. **112**: 265, 1911; quoted by Pied (Footnote 16).

serum has been utilized extensively in South America by Kraus [3] and his collaborators, and they report much success with it and low mortality rates. Lignieres [4] has subsequently contested the value of the treatment, and Kolmer [5] has been unable to demonstrate that it possesses any protective or curative power in experimental infections in mice or rabbits. Hutyra [6] has shown that immune anthrax horse serum gives higher protection in test animals than normal serum. Therefore, until it has been proved beyond question that normal beef serum is equivalent in its curative properties to immune serum, the latter should in every case, especially of any severity, be given the preference. Normal beef serum should be used only when it is impossible to obtain anti-anthrax serum.

The mortality rates with all these measures of treatment, with the possible exception of normal beef serum, are higher than those obtained by the use of anthrax serum. Except in isolated instances, the favorable statistics obtained with other methods than that of serum are so few that they cannot be considered as the established outcome, while, on the contrary, there has been accumulated a sufficient amount of statistical matter on immune serum therapy of the disease to place the method on a firmly established basis.

ANTIANTHRAX SERUM

The credit for the original production of this serum is to be given to Marchoux [7] of France, and Sclavo [8] of Italy. Marchoux succeeded in immunizing sheep to anthrax by use of attenuated cultures, and then, by hyperimmunization with virulent cultures in increasing doses, obtained a serum possessed of both prophylactic and therapeutic properties in animals. Sclavo, working along similar lines but using larger animals, at first goats and later asses, and immunizing over long periods of time, succeeded in producing a potent serum for use in human cases of the disease. Sobenheim [9] has subsequently modified the original methods by employing simultaneous inoculation of antianthrax serum and culture, the latter being at first attenuated and later highly virulent. Sobenheim used his method of immunization with complete success in a herd of 2,700 cattle, without any deaths or ill effects attributable to the inoculations, and with the complete disappearance of any further cases of anthrax among them.

Sclavo's serum has been used extensively in Italy and South America, both prophylactically and therapeutically in animals and in the treatment of the disease in man. It has, however, been very little employed in this country, and the reports of cases of human anthrax treated by serum have been, until lately, entirely lacking in the American literature, with the exception of that made by Royer and Holmes. This has no doubt been due to the difficulty of obtaining any immune serum. The more frequent employment of serum in this country is due to the fact that for a few years the Bureau of Animal Industry in Washington has been making a very potent preparation.

The credit for the perfection of this serum is due to Dr. A. Eichhorn, formerly chief of the bureau, and his collaborators. It was obtained by combined immunization with potent anthrax serum and carefully standardized spore vaccine,[10] and by comparative tests was found to be twice as effective as several of the European preparations. The Bureau of Animal Industry has been furnishing state and city hospitals with the serum on request for several years, but recently has discontinued the practice, as several of the biologic firms are now prepared to furnish such a product.[11]

A considerable amount of statistical data has been accumulated on the question of serum treatment of anthrax in Europe and South America. The details of the various studies that have been carried out would require more space than can be devoted to it in this article. Attention must, however, be drawn to the results which have been obtained in general with this treatment.

Among the more important statistics are those of Sclavo [12] in Italy, showing a mortality of 6.09 per cent. in 164 cases, as compared to a death rate of 24.16 per cent. in patients not receiving serum in other parts of Italy. In 130 cases observed in Argentine Republic and treated by serum,[13] the mortality is considered by the investigators as reduced to zero, the few fatal cases being attributed to secondary infection. Legge [14] compiled twelve cases in England treated by serum with three deaths. Royer and Holmes [15] in this country reported fifteen cases of anthrax, four of which were treated by serum alone with one death, and seven by serum and surgical measures also with one death. Schwartz [1] has compiled sixty-eight cases of anthrax occurring in New York State, in forty-nine of which serum was used either alone or in conjunction with the cautery or surgery, with seven deaths. Pied,[16] in 1913, found that up to that date, seven patients with anthrax septicemia had recovered following serum therapy, and two cases in which it was used without success. Bissell,[17] and Graham and Detweiler,[18] each reported a recovery with immune serum in septicemic cases. Legge,[14] in his thorough article, examined the details of all published cases he could find which had been treated by serum. Of a total of sixty-seven cases, fifty-six were treated by serum alone, and eleven by serum and some other treatemnt with a total death rate of 9. In forty-four of the fifty-six, in which details would allow Legge to draw conclusions, marked improvement had taken place not only in the general symptoms but also in the arrest of the further development of the pustule and in the diminution of the edema

3. Penna, J.; Cruenca, J. B., and Kraus, R.: Normal Beef Serum in the Treatment of Anthrax, Prensa Med. Argentina **4**: 91 (Aug. 20) 1917; abstr., J. A. M. A. **69**: 1388 (Oct. 20) 1917; Prensa Med. Argentina **4**: 455 (April 10) 1918; abstr., J. A. M. A. **71**: 234 (July 20) 1918.

4. Lignieres, J.: Normal Beef Serum in the Treatment of Anthrax, Revista de la Assoc. Medica, Argentina **27**: 370 (Sept.) 1917; abstr., J. A. M. A. **69**: 2076 (Dec. 15) 1917.

5. Kolmer, J. A.; Wanna, D., and Koehler, M.: The Influence of Normal Beef Serum on Anthrax Bacilli, J. Infect. Dis. **26**: 148, 1920.

6. Hutyra, quoted in communication to the author from Dr. Eichhorn, Aug. 20 and Sept. 14, 1920.

7. Marchoux, E.: Serum anticharboneux, Ann. de l'Inst. Pasteur **9**: 800 (Nov.) 1895.

8. Sclavo: Communication au VI Congress de la Société Italienne de médecine interna à Rome, 1895.

9. Sobenheim, G.: Experimentalle Untersuchungen zur Frage der activen und passiven Milzbrandimmunität, Ztschr. f. Hyg. u. Infectionskr. **25**: 301, 1897; Weiter Untersuchungen über Milzbrandimmunität, ibid. **31**: 89, 1899.

10. Eichhorn, A.; Berg, W., and Kelser, R.: Immunity Studies on Anthrax Serum, J. Agric. Res. **8**: 37 (Jan. 8) 1917. Eichhorn, A.: J. Am. Vet. Med. A. **48**: 669 (March) 1916; The So-Called "New" Anthrax Serum, J. A. M. A. **65**: 1479 (Oct. 23) 1915.

11. Communication to the author from the acting chief of the Bureau of Animal Industry, Washington, D. C., Sept. 22, 1920.

12. Sclavo: Sullo stato presente della Sieroterapie Anticharbonchiosa, Revista d'Igiene e di Santa Publica **14**, 1903.

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16. Pied, H.: Sur la pustule maligne (à propos de huit cas personnelle), Bull. méd. **27**: 1135 (Dec. 27) 1913.

17. Bissell, T.: Human Anthrax, Report of a Typical Case, New York M. J. **106**: 110 (July 23) 1917.

18. Graham, R. R., and Detweiler, H. K.: Anthrax: A Case of B. Anthracis Septicemia with Recovery, J. A. M. A. **70**: 671 (March 9) 1918.

by the third day. The average duration of treatment in these forty-four cases was eight days. No visible scar or only a slight one remained in all cases except two. In seven of the nine fatal cases the patients were in a serious condition with widespread edema when the serum was administered, and in all death occurred within thirty hours, usually in twelve, of the time the first dose of serum was given. Moreover, the doses of serum were small, and often only one injection was made and that subcutaneously. Recoveries with Sclavo's serum have been reported by many observers. In Italy, San Felice, Bastia and many others have reported a number of cases. In England, success has attended the treatment, as shown in several reports, such as those of Legge, Lockwood and Andrews, Stretton, Armour and Herley.

Relatively few failures have occurred with immune serum, and these can almost always be traced to the following reasons: (1) its use too late in the course of the disease (from twelve to thirty-six hours before death); (2) the employment of too small doses (from 20 to 30 c.c.); (3) failure to repeat the injections frequently, in many instances often one dose only being given, and that subcutaneously; (4) use in persons in whom the malady was complicated by chronic disease: advanced myocarditis, nephritis, syphilis, etc.

In most instances serum therapy has been combined with some other method, and has not been relied on alone for the cure. It is my contention that no other local method should be used in conjunction with serum. The objectionable features of most of the common measures of treatment have been briefly commented on in the beginning of the article. In many instances the efficacy of serum may be offset by a radical surgical procedure. It is to be recalled that pathologic studies have shown that anthrax in man is primarily a local disease, and remains as such in a high proportion of cases. The human organism, in contradistinction to animals, is very refractive, although not completely so, to the cutaneous disease, and this is shown by the strongly developed character of the local lesion in man as compared to its poorly developed form in most animals in which the infection is quickly generalized. For this reason, in human cases no measure of therapy should be resorted to which would tend to interfere with this localization of the infecting micro-organism.

In order to obtain a method of local treatment which would not possess the disadvantages of those in use, yet would be locally effective and an additional precaution against the development of an anthrax septicemia, I resorted to the local use of antianthrax serum injected into the lesion itself. Two successful cases treated by this method have been previously reported,[19] and since then six more consecutive patients so treated have recovered. For the local injection, a small Luer or record syringe, 2 or 5 c.c., with a fine needle, is used. The needle is inserted in the indurated border of the pustule and is directed fairly deeply (from 2.5 to 3.5 cm.) into the subcutaneous tissues at the base of the lesion. A total of from 10 to 12 c.c. of the serum is injected, the needle being inserted at two or three points and the serum given so as to circumscribe the pustule. The site of injection is previously iodinized and the operation carried out with a carefully aseptic technic, so that a mixed infection shall not be induced. We have used the injection once or twice in twenty-four hours in mild and moderate cases, while in severe, voluminous lesions they may be made every six to eight hours, and larger quantities given. Symmers [20] finds a four hour interval between the injections a desirable one. Commonly from four to six treatments are required in the usual case.

There is a slight degree of increase in the inflammation following the first one or two local treatments, but within two or three days the lesion has usually taken a decided turn for the better, and rapidly dries up, the induration and soft edema subsiding, and the eschar is the only visible remains of the lesion left after one week. The eschar itself spontaneously separates from the underlying tissue during the second or third week, and the wound that remains quickly heals with practically no scarring.

The local use of serum is logical, as it is then supplied in a most concentrated form at the site of the infection. Theoretically, the value of this method of administration is dependent on two factors: (1) The local injection insures that the lymph secretion in the region of the pustule contains a high antibody content. This is especially important in anthrax, as it is to be classed as a massive inflammation, and Flexner has shown that such inflammations receive a diluted and modified lymph secretion. It seems very probable that, when the serum is given by the general circulation alone, the lymph in the immediate region of the pustule does not contain as high a concentration of the specific serum as is desirable. (2) The local inflammatory reaction is of a peculiar type. The serous discharge from the pustule is characteristically poor in leukocytes.[21] Moreover, the pathologic anatomy shows a strong tendency for segregation of the bacilli in the center of the pustule practically free of leukocytes, the latter being distributed as dense infiltration around the margins of the lesion and in the adjacent cellular tissue.[22] Probably a condition of negative chemotaxis exists in the early stage of the infection; and at this time, and throughout the disease in most severe and fatal cases, leukocytic activity is not much in evidence. Since the serum apparently has a marked effect in facilitating phagocytosis, according to the experiments of Marchoux, it is logical to supply it concentrated at the site of the lesion.

It must not be forgotten, however, that the local injection of serum is only a supplementary measure to the general intravenous, intramuscular or subcutaneous administration of the specific agent. The essential aim in administering serum is threefold: (1) to bring about a subsidence of the local lesion; (2) to counteract whatever toxemia may exist, and most important of all, (3) to anticipate and prevent the development of an anthrax septicemia or to control it if it exists when treatment is begun.

I believe that the frequency of the injection, and the amount of serum given, as well as the route of administration, should be in accordance with the severity of the case. In all instances a blood culture should be taken on the first day of treatment, and thereafter whenever symptoms arise which are suggestive of a septicemia.

19. Regan, J. C., and Regan, C.: Human Anthrax, Am. J. M. Sc. **157**: 782 (June) 1919. Regan, J. C.: The Local Use of Antianthrax Serum in the Treatment of Anthrax, J. A. M. A. **72**: 1724 (June 14) 1919

20. Symmers, D., quoted in Human Anthrax and Its Treatment, Weekly Bull. New York Health Dept., Aug. 7, 1920.

21. Boidin, L.: Recherches experimentales sur les poisons de la bactéricidie charbonneuse, Paris thesis, 1905-1906.

22. Straus, I.: Contribution à l'anatomie pathologique de la pustule maligne, Ann. de l'Inst. Pasteur, 1888, p. 429.

DOSAGE

A tentative plan of dosage for the general administration of antianthrax serum would seem of practical value, and I therefore present an outline giving in conjunction the doses which Dr. Eichhorn has recommended in a recent letter.[6]

A. *In Nonsepticemic Forms.*—1. In mild cases, with little or no constitutional symptoms and a small, well circumscribed lesion with little edema, the serum need not be given more often than every twelve to twenty-four hours, and commonly not more than four injections are required of from 40 to 50 c.c. each (Eichhorn advises 6 50 c.c.). The first one or two injections may be given intravenously, the subsequent intramuscularly and subcutaneously.

2. In moderate cases with a medium sized lesion and moderate degree of edema, with or without definite constitutional symptoms, the serum should be administered by the intravenous route for the first few (three or four) doses every eight to twelve hours in amounts of from 50 to 60 c.c. (Eichhorn, from 50 to 100 c.c.[6]), the subsequent injections being in accordance with the progress of the case, and given intramuscularly or subcutaneously. Commonly not more than six injections would be required.

3. In severe cases with large voluminous lesions and extensive edema, with or without marked constitutional symptoms, the serum should be administered by the intravenous route in fairly large doses, from 80 to 130 c.c. (Eichhorn, from 100 to 200 c.c.[6]) every six to eight hours for five or six or more injections until the disease is controlled, when the intramuscular route may be used, the dosage reduced to from 30 to 40 c.c., and the interval lengthened to twenty-four hours.

B. *In Septicemic Cases.*—The injections should be made every three to six hours intravenously, in doses of from 100 to 200 c.c. (Eichhorn, from 200 to 300 c.c.[6]), and this type of treatment continued until the septicemia is terminated. Arsphenamin may yet prove a useful adjunct in the treatment of these desperately ill patients.

In treating all forms of anthrax it is best to give too much serum than too little, and it is good policy when, during the first few days of treatment, the injections are being made intravenously, to supplement this with subcutaneous or intramuscular injections. Severe serum reactions are altogether exceptional in my experience; chills are encountered, but I know of no instance of severe anaphylactic phenomena. It is wise in all cases to dilute the first few intravenous injections with sterile physiologic sodium chlorid solution, to inject the serum slowly, and to have it at or about body temperature.

RESULTS OF TREATMENT

Anthrax serum fulfils best the points mentioned previously as requisite for an ideal method of therapy for anthrax: It offers the least pain, a minimum of scarring and deformity, it is applicable to all forms and locations of the disease, it is a specific method, and it is a safeguard against generalization of the local infection. It has on an average the lowest mortality rate, and necessitates in most cases the shortest absence from employment.

At the Kingston Avenue Hospital during the last two years, we have treated eight cases of anthrax by the local and general administration of Eichhorn's serum combined with complete rest in bed, with resultant recovery of all eight patients. In these patients the acute inflammation of the pustule subsided usually from the second to the sixth day of treatment, the eschar separated spontaneously from the twelfth to the twenty-first day, the wounds healed from the twentieth to the thirty-second day, and patients were well enough to be up and around from the seventh to the twelfth day. No deformity occurred in any instance, no serious complication or sequelae ensued in any case, and the scar that remained after healing was complete was so small as to pass unnoticed except on minute inspection.

Dr. Douglas Symmers[20] has adapted the local and general serum therapy of anthrax at Bellevue Hospital, the previous method of combined excision and serum treatment having been abandoned. He reports very satisfactory results in fifteen cases treated by Eichhorn serum, the patients who came under treatment early being speedily cured, recovery taking place in from a week to ten days. The method of administration has been to give 40 c.c. every four hours, and at the same time to inject 10 c.c. of serum around the lesion.

An examination of reported cases of anthrax in New York City[22] during recent years, given in the accompanying tabulation, is instructive from the standpoint of treatment.

ANTHRAX IN NEW YORK

Year	Cases	Deaths
1915	13	9
1916	4	3
1917	16	9
1918	15	4
1919	14	9
1920 (6 months)	12	1

Graham,[23] in a recent article, comments on the change in the mortality rate. In 1915, serum was little used and excision was commonly employed. After 1916, serum began to be more and more utilized, but excision and other local treatment was still extensively resorted to. In 1920, serum locally and generally has been more or less uniformly adopted and excision abandoned. Hubbard and Jacobson,[24] in their study of thirty-four cases of anthrax occurring in New York City in 1919 and 1920, concluded that the most successful method of therapy seemed to be the local and general administration of antianthrax serum.

CONCLUSIONS

1. The measures of local therapy of malignant pustule that have been in common use for many years possess too many disadvantages to be considered locally effective. These disadvantages include pain, scarring, danger of introducing secondary infection into the lesion, liability of disseminating the infecting micro-organism both locally and into the circulation, prolongation of convalescence, lack of specific action, and high mortality rates.

2. As anthrax in man is primarily a local infection with a decided tendency to remain as such in a high proportion of cases, no method of treatment is warranted which tends to break down the barrier zone of the inflammatory process which Nature has so carefully and characteristically constructed in this disease.

3. Since we have available an extremely potent therapeutic agent in antianthrax serum, these measures

23. Graham, J. R.: Cutaneous Anthrax, New York M. J. **112**: 931 (Dec. 11) 1920.

24. Hubbard, T. D., and Jacobson, W.: Investigation of Thirty-Four Cases of Human Anthrax Occurring in New York City During 1919 and 1920, Monthly Bull New York Health Dept. **10**: 249 (Nov.) 1920.

should be omitted from the therapy of the disease. The serum should be administered both locally around the lesion and generally into the circulation by the subcutaneous, intramuscular or intravenous routes. The dosage, frequency of injection and route used necessarily depend on the location and severity of the lesions, the presence or absence of an anthrax septicemia and, to a lesser extent, on the degree of the constitutional symptoms. An outline of dosage in the various forms of the disease has been given above.

4. The local injection of serum around the lesion every twelve to twenty-four hours is a most desirable method to replace the local measures until lately in common use. It possesses none of the disadvantages or dangers of the previous methods. On the contrary, it is an additional safeguard against an anthrax septicemia, and appears to exert a very beneficial action in bringing about a rapid subsidence of the malignant pustule itself. The theoretical basis for the method is discussed in the preceding text.

5. There have been eight cases of anthrax successfully treated in the last two years at the Kingston Avenue Hospital by the employment of Eichhorn anti-anthrax serum, given by local injection around the lesion and general injection into the circulation, without any fatalities. The acute inflammation disappeared from the second to the sixth day of treatment, the eschar separated from the twelfth to the twenty-first day, and the wound healed from the twentieth to the thirty-second day. No sequels were noted in any instance, and the scar left was so minute as to pass unnoticed. The acute stage was over within a week.

FOOD INFECTIONS

WITH AN ILLUSTRATIVE OUTBREAK *

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AND
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Students of the subject now believe that practically all instances of food infections are due to the bacillus of Gaertner (*B. enteritidis*), which is taken as the type of a group of closely allied organisms. Instances of food "poisoning" caused by *B. enteritidis* are rare in this country; at least very few outbreaks have been described. They occur more frequently on the continent of Europe and occasionally in England.

The symptoms of food infection are essentially those of an acute gastro-intestinal irritation, namely, nausea, vomiting, abdominal pain and diarrhea. The onset is usually sudden. The attack may be ushered in with headache and a chill. The abdominal pain is frequently the first symptom, and may be griping and severe. The diarrhea usually consists of repeated bowel actions, which as a rule are offensive. Later in the attack, the stools become more watery and are frequently of a green color. Faintness, muscular weakness and prostration may be quite marked. Thirst is always present. There is almost always a rise of temperature, usually to about 102 or 103 F. Various nervous manifestations, such as restlessness, muscular twitchings and drowsiness, may occur, but these symptoms are not constant or marked. Oliguria is often present. Herpes and other skin rashes have been noted. The clinical picture is that of an acute, self-limiting febrile infection.

The severity of the symptoms varies greatly in different outbreaks, and even in the same outbreak. All degrees are encountered, from fulminating cases, fatal within twenty-four hours, to those of slight diarrhea and malaise, insufficient to keep the patient from work. Usually the attack is over in a day or two, with prompt recovery, although occasionally marked prostration may persist. The severity doubtless depends on the virulence of the particular strain of bacilli concerned, the length of time it had to grow upon the incriminated food before consumption, and the temperature of growth. The symptoms vary with the dose, that is, with the number of bacteria ingested with the food. The susceptibility of the individual also plays an important rôle in this, as in other infections. The severity of the symptoms, therefore, may be due to a number of complicating causes, some of which are not understood.

Usually from six to twelve hours elapse between the ingestion of the food and the onset of symptoms, though occasionally the period of incubation is four or less, and it may be seventy-two hours or more. Not only does the incubation period vary in different outbreaks, but in the same outbreak widely different incubation periods have been noted. It is natural to accuse the food vomited as the food responsible for the trouble, but frequently several meals elapse between the ingestion of the infected food and the onset of symptoms. It is a common mistake to accuse the wrong food.

The case fatality rate varies greatly in different outbreaks. In the 112 British outbreaks studied by Savage, there were some 6,190 cases with ninety-four deaths, a case fatality rate of 1.5 per cent.

The age and sex distribution depends entirely on the accidental age and sex distribution of those who eat the infected food.

Most cases occur in the summer time, the disease corresponding in seasonal prevalence to typhoid fever, cholera, dysentery and other intestinal infections. The bacilli responsible for food infection grow in the food before it is eaten, and therefore temperature is a very important factor. The greater multiplication of these bacteria in hot weather also increases the opportunities for transmission of infection through flies and other means. Secondary infections rarely occur. There is the same potential possibility of contact infection as in typhoid fever, but the cases of food infection are for the most part acute and of short duration, so that there is little opportunity for secondary infection. Furthermore, human carriers are very infrequent.

The great majority of outbreaks of food infections are due to meat foods; hence, the frequent use of the term "meat poisoning" in this connection. Of the 112 British outbreaks, in twenty-one the vehicle was a non-flesh food; that is, milk, one; cream, one; ice cream, six; potatoes, two; pineapple jelly, one; peaches, one; rice cooked in fat, one. The remaining ninety were all due to flesh food. The meat of the pig or ox accounts for 68 per cent. of the British and 61 per cent. of the continental outbreaks. The almost complete absence of outbreaks due to the meat of the sheep is striking. The number of cases ascribed to fish is small.

Most outbreaks are due to some form of prepared meat foods, such as brawn, meat pies, sausage and chopped meat. When the nature of the infection is

* From the Department of Preventive Medicine and Hygiene, Harvard Medical School.

considered, it becomes obvious that the more the food is handled and the longer it lies around, the greater the opportunity for it to become contaminated and for the bacteria to grow and multiply.

It cannot be too strongly emphasized that in the vast majority of outbreaks of food infection the food affected is not noticeably altered in either appearance, taste or smell. The prevalent idea that poisonous food must be "tainted" still persists, although long exploded. Bacilli belonging to the Gaertner bacillus group cannot be detected in food or water, any more than the typhoid bacillus, dysentery bacillus or cholera vibrio can be detected with the unaided senses.

In the Ghent outbreak, investigated by van Ermengem in 1895, a slaughterhouse inspector (a veterinary surgeon) was so certain that the suspected meat (saveloy), in the absence of any abnormal signs, could have no connection with the trouble that he ate two or three pieces of it to demonstrate its harmlessness. He was attacked with severe cholera-like symptoms and died five days later, the Gaertner bacillus being recovered postmortem.

In a few outbreaks, however, minor peculiarities of the food have been noted, such as objectionable flavor, heavy odor, and moist or soft condition. These, however, are rare exceptions and not the rule.

It is not *decomposed* food, but *infected food* that is likely to cause trouble.

Diagnosis of food infection depends on: history of exposure to the suspected food; symptoms suggestive of food poisoning; isolation of the infecting organisms from the suspected food, and also from the blood, urine, feces or viscera of the patient (bacilli belonging to the Gaertner group disappear from the feces in from seven to ten days after the onset of symptoms); specific identification of the causative organism by agglutination tests; demonstration of agglutinins in the blood serum of patients. A positive reaction can be detected six or eight days after the onset of symptoms. Agglutination in comparatively low dilutions is usually accepted as diagnostic, owing to the fact that it is extremely rare to find a positive reaction for *B. enteritidis* or *B. suipestifer* in normal individuals.

It must be quite evident that the term "food poisoning" is not well chosen, so far as infections with Gaertner's bacillus are concerned. This bacillus produces an acute febrile infection, specific in nature. The attacks are usually mild and brief, with complete recovery. The disease, however, in all essential particulars clearly belongs to the group of intestinal infections, including typhoid fever, dysentery and cholera. No one would subscribe to the propriety of calling typhoid fever "food poisoning," even though the typhoid infection was contracted from bacilli contained in contaminated milk or infected water.

GAERTNER'S BACILLUS AND SOURCES OF INFECTION

B. enteritidis is the type of a group of organisms lying midway between the colon bacillus, on the one hand, and the typhoid bacillus, on the other. It is therefore often spoken of as the "intermediate group," the "hog cholera group," the "enteritidis group," the "paratyphoid group," and the "Salmonella group." The classification of the members of this group is quite involved, and there is still a lack of agreement among bacteriologists concerning some of the details.

Gaertner, in 1888, brought forth the first definite evidence which incriminated bacteria as an etiologic factor in food poisoning. At Frankenhausen, fifty-seven individuals became ill after eating the flesh of a cow that had been slaughtered on account of enteritis; one case resulted fatally. Gaertner isolated the bacillus from the organs of the cow and also from the spleen of the man who died.

B. enteritidis and its congeners are pathogenic for some of our food animals as well as for man. Cattle suffering during life from puerperal fever, uterine inflammations, navel infection (in calves), septicemia, septic pyemia, diarrhea and local suppurations are likely to furnish meat containing the Gaertner bacillus or closely related bacilli. Such meat has frequently given rise to "meat poisoning." Hence, emergency slaughter (nothschlacht), unless intelligently supervised, furnishes meat that may be a menace. The meat of such animals presents no warning signs of its danger. This fact was well proved by the meat inspector at Ghent, already referred to. The story of this tragedy has become classic.

The meat may come from healthy animals, but become infected after slaughter. This may take place through the hands or instruments of the butcher who has just handled a diseased carcass. There are other possibilities, such as human carriers or fecal contaminations.

Bainbridge states that "infection of meat by human carriers of *B. suipestifer* is unknown." Human carriers of *B. enteritidis* are exceedingly rare. Human carriers of *B. paratyphosus* B are occasionally discovered, but these also are infrequent. In 4,154 specimens of human feces from healthy individuals examined in our laboratory in 1917-1918, not a single carrier of any of these nonlactose fermenters belonging to the enteritidis group was found.

The English observers believe that all cases of food poisoning traced to human carriers are in reality cases of paratyphoid fever; but the Germans, who do not differentiate between *B. paratyphosus* B and *B. suipestifer*, hold that the latter organism also occurs in normal, healthy human intestines, and may thus become a source of food infection. Such instances must be exceedingly rare in the United States, for in our studies of the subject we have found only the outbreak here recorded in four and one-half years.

The common gray rat and mouse may harbor *B. suipestifer* and possibly *B. enteritidis* as carriers. Zwick and Weichel examined 177 mice and found that twenty-eight were acting as carriers of Gaertner group bacilli. Hence, food may become infected by contamination with rat or mice feces. There is abundant opportunity for such contact in the slaughterhouse, in butcher shops, in refrigerator plants, in transportation and in the home.

Contamination with fecal bacteria is highly improbable as a source of infection, for if it were true, food poisoning would be exceedingly common, so great is the ordinary fecal contamination of our food. During the years 1917-1918, more than 500 samples of food were examined in our laboratory without the discovery of a single pathogenic member of the colon-typhoid group.[1]

AN OUTBREAK OF FOOD INFECTION

The outbreak occurred in Washington, D. C., among a number of students of the Georgetown Medical

1. A further discussion of the subject of food poisoning may be found in the chapter on "Food Poisoning" in Nelson's Loose Leaf System of Medicine, from which many of the facts cited above are taken; it is also discussed in Preventive Medicine and Hygiene (Ed. 4) by one of us (M. J. R.).

School. The cases followed a spread eaten at about 6 p. m., May 30, 1921, at a fraternity house, corner of Twentieth and N streets, Northwest.

Twenty-five students partook of this meal, eighteen of whom were made ill.

Three temperature charts of the more severe and typical cases are shown.

The dinner consisted of canned string beans, canned tomato soup, fresh roast pork, mashed potatoes, canned tomatoes, bread pudding and coffee served with evaporated milk.

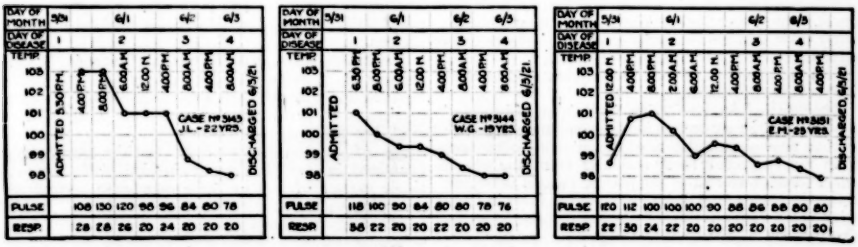
All of those who ate bread pudding had symptoms, whereas those who did not partake of this food remained free of symptoms. The epidemiologic evidence, therefore, points clearly to the bread pudding. This is the only food eaten in common by those attacked. *B. enteritidis* was isolated from the sample of bread pudding.

The meal was taken at 6 o'clock, and the symptoms began about 2 or 3 o'clock the following morning. The shortest period of incubation, therefore, was about twenty-four to forty-eight hours. The convalescence was rapid, leaving no sequelae. Only one case was moderately severe. In this instance the student (E. M.) had, in addition to the fever, numbness in his fingers and contraction of the muscles of the hand. One other student had contractions of the muscles of the face. Both of these were temporary and passed away in a few hours. There were no particular disturbances of vision.

Treatment consisted of washing out the stomach and purgation. The stomach washings were yellowish with no discernible odor. June 2 only five of the boys remained in the hospital, convalescing, with normal temperatures. At this time they had a "washed-out feeling" or sense of fatigue. Recovery in all cases was prompt and uneventful.

A sample of the bread pudding was analyzed by one of us (H. W.) and an organism isolated which proved to be *B. enteritidis* of low virulence.

Two mice were fed with the liquor from the bread pudding, two with the whole bread pudding, and two



Typical temperature charts.

eight or nine hours. Some of the students, however, were not taken ill until the next afternoon, giving a period of incubation of approximately twenty hours.

The symptoms were acute onset and fever (as shown in the temperature charts). Some of the patients had chills. Almost all complained of abdominal pain, for the most part of a colicky or griping character.

AGGLUTINATION REACTIONS OF FOUR STRAINS ISOLATED FROM THE BREAD PUDDING

Strain	Serum of Patient 1 (M.) 1:50	1:100	1:500	Serum 2 (No label) 1:50	1:100	1:500	Serum of Patient 3 (G.) 1:50	1:100	1:500	Control
B. coli	—	—	—	—	—	—	±	—	—	—
B. typhosus	—	—	—	—	—	—	—	—	—	—
B. paratyphosus A	—	—	—	—	—	—	—	—	—	—
B. paratyphosus B	—	—	—	—	—	—	±	—	—	—
B. enteritidis	+	+	—	+	+	—	+	+	—	—
Isolated strain III	+	+	—	+	+	—	+	+	—	—
Isolated strain VII	+	+	—	+	+	—	+	+	—	—
Isolated strain XVII	+	+	—	+	+	—	+	+	—	—
Isolated strain XIX	+	+	—	+	+	—	+	+	—	—

Diarrhea was the common and prevailing symptom, the passages being watery, somewhat offensive, some of them greenish, and passed without tenesmus. The passages numbered from two or three to six or eight or more. Most of the patients had nausea, and some of them vomited several times. There were no other symptoms except those usually seen with fever: the temperature rose to between 102 and 103 F. in most of the cases, but rapidly declined to normal in from

were injected subcutaneously with an emulsion of the bread pudding; all these mice failed to show symptoms. Similar experiments on guinea-pigs likewise gave negative results.

The material was plated on carefully balanced Endo's medium and isolation made of a number of nonlactose fermenters. Four strains of a gram-negative bacillus giving typical fermentation reactions for *B. enteritidis* were obtained. All four strains isolated gave an agglutination reaction in a dilution of 1:1,000 with a specific enteritidis rabbit serum.

Specimens of blood were obtained from three of the students about ten days after the onset of symptoms. The results of agglutination show specific reactions for each of the four strains isolated from the bread pudding and also for a type strain of *B. enteritidis*. No agglutination in dilutions of 1:50 was obtained with *B. typhosus, B. paratyphosus A* or *B. coli.*

COMMENT

It is quite clear that the students suffered with an acute infectious fever, having a short period of incubation, sudden onset and temperature from 102 to 103 F. with gastro-intestinal symptoms. It is also quite clear that the food responsible was the bread pudding; in fact, four of the students said that the bread pudding had a "peculiar" taste, and one of them refused to eat it after the first spoonful. Just how the bread pudding became contaminated has not been worked out. It consisted of stale bread, fresh milk, sugar, eggs and cinnamon. It is natural to think

of the milk as the probable carrier of infection for the reason that it has been responsible for such outbreaks in other instances. The milk may have been contaminated in the kitchen; furthermore, the bread pudding was made about 9 o'clock in the morning and stood around the warm kitchen the entire day, giving ample opportunity for bacterial growth.

THE CORRECTION OF CONGENITAL CLEFT PALATE AND HARELIP

SURGICAL PRINCIPLES INVOLVED *

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The surgical treatment of congenital cleft of the hard palate, extending through the ridge, associated with harelip, should be undertaken at the earliest age consistent with the child's physical condition. In normal cases of development, this is from six to ten weeks after birth. The first and one of the major problems

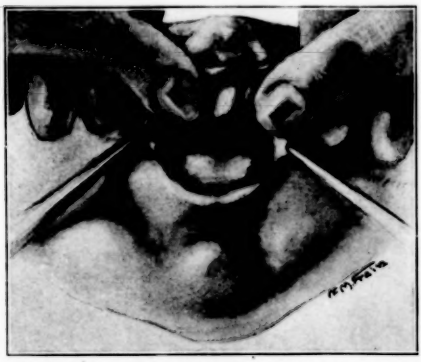

Fig. 1.—Process of molding bones to reduce deformity of arch and nose.

is that of feeding. Every cleft palate and harelip baby is first of all a medical case. The pediatrician has much to do with end-results. A diet formula suited to the individual case insures reasonable development and a tested diet after operation. However long the time, it is a primary problem.

While it is true that these babies show marked general improvement following operation, treatment should not be undertaken until the child is in good condition, and shows a reasonable increase in weight. Feeding may be carried on with the spoon or medicine dropper of suitable size. The nipple should not be used at all. In other words, the special diet suited to the individual case and the method of feeding should be established before operation. With the diet formula and feeding method established, the patient is insured against any uncertainty or experimentation after operation. The nipple should not be used following closure of the hard palate and lip. The function of sucking exerts sufficient pressure to cause a certain amount of bone separation, and with it the characteristic low, flat, broad nostril is produced. Any postoperative change in the bone is reflected in the nostril.

Immediately after operation, the patient is again the direct charge of the pediatrician. The care of the

Fig. 2.—Dissections, to relieve tension and permit molding, illustrated by dotted line.

wound is a minor incident, and is most satisfactorily handled by the open method. The usual dressing supported by adhesive strips interferes with wound repair, rather than contributes to it. Secretions from the nose, together with the liquid food, keep the dressing constantly wet. A dry wound is always preferable to a moist wound, apart from the danger of infection.

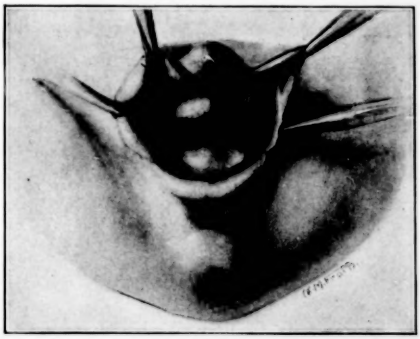

Fig. 3.—Direct view of dissection.

Tension should be relieved by proper and adequate flap preparation, and not by postoperative or even preoperative dressings or devices. Freedom from irritation is paramount, particularly in children. Adhesive strips are constant irritants, and do not solve any problem in the premises. The wound should be carefully

* Read before the Section on Stomatology at the Seventy-Second Annual Session of the American Medical Association, Boston, June, 1921.

cleansed once or twice daily, sponged with 50 per cent. alcohol, and dusted with Thiersch powder. This detail may be discontinued with the disappearance of blood and wound secretion. On the third day the removal of

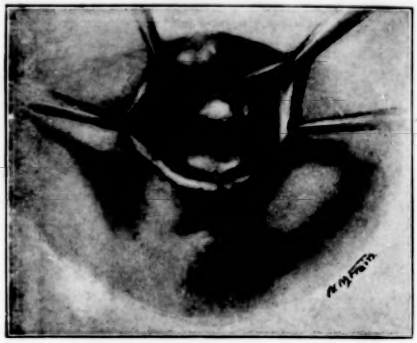

Fig. 4.—Wire suture transfixing bone.

sutures should be begun, one or two at a time, leaving strategic sutures till the last—seven or eight days after operation.

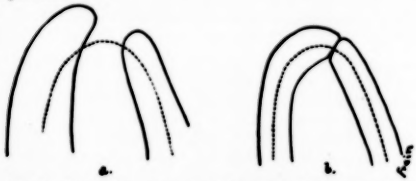

Fig. 5.—Relation between upper and lower arches (*a*) before and (*b*) after correction. Dotted line represents lower arch.

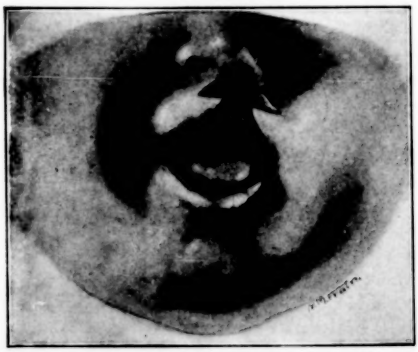

Fig. 6.—Transverse incisions for closure of simple form of single harelip.

The second problem is the anesthetic, which is of first importance. A well regulated electric vaporizer and aspirator is preferred. Once asleep, the child needs little ether if given continuously. The aspirator keeps the blood out of the throat, reduces the amount swallowed, and takes precedence over sponging both in point of time and in irritation of the tissues. With the assistance of a skilled anesthetist, the operative period is materially reduced.

While these matters have nothing to do with the operative result from the point of technic, they contribute in a primary way in safeguarding the life of the child and insuring speedy wound repair.

The operative treatment presents a threefold problem—the jaw, the nose and the lip—all three being involved in the deformity. No one of the three can be treated as independent of the others. Unless a successful bony orientation is obtained, the arch, the nose and the lip will be defective. In point of importance the sequence is an obvious one: arch, nose, lip.

1. *Arch.*—The first step is complete anatomic restoration, which is accomplished by immediate molding (Fig. 1). The lip and cheeks are dissected from the bone (Fig. 2) to a point permitting proper shaping of nose and lip without tension (Fig. 3). A single wire suture is used to transfix the bones (Fig. 4). If

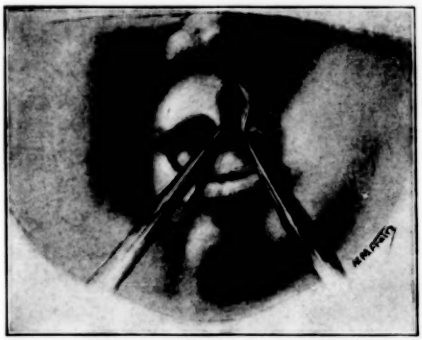

Fig. 7.—Lip held in position for closure.

placed properly and carefully, the wire does not damage or interfere with the development of the teeth. The bones are molded with a threefold purpose in view: (*a*) to close the bony cleft; (*b*) to restore proper relationship between upper and lower arches, and (*c*) to bring the nose into the median line of the face. When the tip of the nose has been brought into the median line the septum will be straight, and the nasal passages equal, if the molding is limited to the long segment. By bringing the two jaws together before the cleft is closed, it will be noted that the occlusal relationship of the short segment is practically normal; that the deviation is confined to the anterior two thirds of the long segment (Fig. 5). It follows,

Fig. 8.—*a*, hard and soft tissues of palate; *b*, mucoperiosteal dissection; *c*, method of splitting soft palate to avoid dividing nasal aponeurosis.

therefore, that the molding of the anterior two thirds of the long segment will bring the two arches into normal occlusion; will reduce the nasal deviation, and close the upper arch.

Fig. 9.—Appearance of patient before and after operation. This and the succeeding illustrations exemplify (*a*) bony correction of arch and nose; (*b*) shaping of nostril, and (*c*) proper closure of lip. It will be noted that the series illustrates the several types of unilateral cleft.

The occlusal relation is further proved when the deciduous teeth erupt. The linguobuccal relations have been normal in our cases, without disturbing the posterior jaw. It is interesting to note the occlusal relations in bony clefts extending only to the anterior ridge. One often sees a wide cleft in an adult extending to the anterior ridge, with normal occlusion of bicuspids and molars.

Occlusal defects are due, therefore, to clefts extending through the anterior ridge, and the deformity is measured by the malposition of the anterior two thirds

Fig. 10.—Patient before and after operation.

of the long segment. When the long segment is reduced, the cleft is closed; the upper arch properly related to the lower arch; the nose placed in the median line, and the deviation of the septum corrected. Only when such reduction has been made is a normal nose or lip possible.

2. *Nose.*—The correction of the nasal deformity is coincident with the correction of the bony arch (Fig. 6). The one is contingent on the other. Unless the bony nose is completely reduced, it is not possible properly to shape the defective nostril. Bone reduction is basic, and, when accomplished, the nostril is not a difficult problem. To secure a well shaped nostril it is only necessary to carry the dissection back far enough to permit of satisfactory molding without tension.

The defective nostril is naturally fashioned after the good one.

3. *Lip.*—The lip problem (Fig. 7) is half solved in the steps preceding. The two necessary final points are proper length and relation of skin and mucosa.

The low, flat, broad nostril following operation is caused by several factors:

1. Incomplete reduction of the long segment.
2. Depression of the short segment.
3. Incomplete or imperfect preparation of soft tissues in shaping nose and lip.
4. Use of a nipple following the operation.
5. Sucking of the thumb or finger, or the use of a "pacifier."

The second step is more or less elective in point of age. I prefer to wait till the twelfth or fifteenth month. In closing the soft palate, the ordinary rules of plastic surgery are followed: flaps with adequate circulation which can be united without undue tension. To relieve tension, division of the nasal mucosa at the posterior border of the bony palate is generally practiced. This is a serious error, and is, I believe, the

Fig. 11.—Patient before and after operation.

most frequent cause of nonunion. The tissues at this point should be split and not divided. Splitting the palate, as indicated in Figure 8, relieves all tension and preserves the blood supply.

122 South Michigan Avenue.

ABSTRACT OF DISCUSSION

DR. V. P. BLAIR, St. Louis: I prefer to operate during the first twenty-four hours of life, and I have never seen a child shocked at that period. It is almost impossible to shock an animal at that age. The point of not feeding the child with a nipple before it is operated on is an interesting one. My own conclusion is that the nasal deformity depends almost entirely on the relationship in which the posterior ala is placed, and the result depends on whether there is no cleft in the alveolar process or a wide cleft. If a lip cleft without alveolar or palate cleft is not corrected, the nose will grow over to the other side, the lower end of the septum will point

Fig. 12.—Patient before and after operation.

the same way, and the septum will deviate to the side of the cleft. I agree that one may have a sinking of the supports of the alveolus on the opposite side from the cleft which may persist regardless of how carefully the bony parts are adjusted. There have been many varieties of the flap opera-

tion for cleft palate, and it is only fair to the early operators to acknowledge what they have accomplished. Of all the operations that have been devised, I believe the original von Langerbeck operation to be the most important. This operation with its lateral incisions and its complete cutting off of the palate aponeurosis can be done without cutting either the nerve or the descending palatine artery. Whether or not the distal palate and the levator palatine are cut is entirely a matter of choice of the operator.

DR. TRUMAN W. BROPHY, Chicago: One thing brought out emphatically in this paper is the fact that the treatment

Fig. 13.—Patient before and after operation.

of cleft palate must begin with bone surgery. I have invented two appliances which are used to assist infants in feeding. The first is an infant velum which the mother may hold in her fingers, so the child can get the milk from the breast. The second is a velum attached to a bottle nipple. Dr. Moorehead has emphasized the importance of bringing the bones together and uniting them so as to place the nose in the middle of the face and constructing a normal arch. The bones must be moved together before the nose can be brought into its normal position. Attempts to operate on the lip, disregarding the separated bones, will leave a deformity that will remain to the end of life. If the anterior portion of an infant's cleft palate be moved into proximity by the traction of the orbicularis oris muscle following the closure of a harelip, the tuberosities move abnormally apart, the malar

Fig. 14.—Patient before and after operation.

processes of the maxillary bones acting as pivots. The effect on the soft palate is to produce, when united, a tenseness like a drumhead, which can be overcome only by loosening the soft parts laterally above, and posteriorly. It has been my practice never to put anything on the lip after operation. If the lip is exposed it is much easier to keep it clean. It has taken about thirty-five years to establish the practice of bone surgery first in the treatment of complete congenital cleft palate. The principle has won out and surgeons are doing it everywhere. I made a statement many years ago that the upper jaw in a complete cleft of the palate was as much broader than the lower as the distance between the borders of the cleft. I can show you a number of cases with incomplete cleft where the bone tissue was sufficient to completely close the palate if the bones had been approximated in early infancy. The congenital absence of the hard and soft palate rarely occurs. I have five patients now under my care for whom the premaxillary bones were excised. These bones are essential to correct facial contour, to a normal dental arch, and to normal features.

DR. W. L. SHEARER, Omaha: I wish also to emphasize the importance of placing the two halves of the maxillary bone in apposition and carrying the long half over far enough so that the deformity or depression of the affected nostril may be subsequently corrected. Bone surgery, where there is a cleft, either single or double, involving the anterior ridge of the hard palate, is the foundation on which the subsequent operations rest. One would not think of building a house without first making a good foundation.

THE NASAL RELATION OF HARELIP OPERATIONS *

GEORGE V. I. BROWN, M.D.
MILWAUKEE

All who have seen these cases are familiar with the characteristic deformities that are associated with harelip. These in a general way may be, as they usually have been, described as deflections of the cartilaginous nasal structures in a direction away from the side of the fissure in single harelip cases, with a corresponding flat, spread out appearance of the alar cartilages and an enlarged naris on the affected side; and in double harelip cases, especially when there are associated palate fissures also, the projection forward of the premaxilla with thickening and elongation of the nasal septum and vomer, and a flattened appearance of the alar cartilages on both sides.

The correction of these combined defects, as a matter of course, has been one of the objects of all corrective surgical operative treatment of these cases, quite as much as the suturing of the lip fissure and the correction of the outline of the prolabial border.

Nevertheless, if the best operative results are to be obtained in the treatment of harelip, there must be more specific recognition of the separate anatomic divisions of each of the parts of which the outline has been altered through the developmental failure that caused the original congenital defect, or the mechanical and physiologic influences which are directly related to disarranged functional activities from and even before the very hour of birth, and later to neglect or misplacement at the time of operation.

Each of the anatomic subdivisions of the nasal, labial and surrounding facial structures is subject to the unnatural conditions involved. Often this effect is quite unevenly distributed, so that growth at one point may be retarded, while adjacent tissue is unnaturally stimulated to enlargement. It is therefore safe to conclude that in most cases the cosmetic result of a cheiloplasty for harelip correction will be in more or less exact proportion to the degree in which the associated nasal defects may have been overcome by the operation.

In natural sequence it also follows that the key to the door of surgical operative improvement, in cases in which early imperfect operations have left their hideous marks on these individuals, lies in the readjustment of disarranged functional activities by careful replacement in order that there may be continued advance toward

* Read before the Section on Stomatology at the Seventy-Second Annual Session of the American Medical Association, Boston, June, 1921.

improvement, instead of a tendency for the disfigurement to increase. This usually involves the removal of redundant tissue and the addition of tissue by transplants, if necessary, to round out the defective features and thus to overcome the evidences of insufficient growth.

CHARACTERISTIC DEFORMITIES OF HARELIP CASES

In cases of harelip with wide third degree fissures and complete cleft of the hard and soft palates, there are the following associated defects. The premaxilla is attached to one side of the palate, and the dividing line of the fissure is usually at the premaxillary suture on the affected side.

The effect of this, as development proceeds, is to cause the premaxillary portion of the jaw to project forward and to be drawn to one side in a direction away from the side of the fissure. The degree of this deformity is to some extent commensurate with the width of the fissure. In some of these cases the nasal septum and vomer are attached to the palatal process of the superior maxillary at the anterior portion, and under these circumstances the nasal septum becomes spread out with a bulging toward the side of the fissure until it may almost seem that Nature has been making an effort to bridge the palate fissure, although, of course, it is the attachment on one side and the lack of counterpressure on the affected side to counteract the atmospheric pressure of respiratory effort that is probably responsible for this alteration in the nasal septal form.

In other cases of the same type of lip and palate fissure, there seems to be an almost complete absence of nasal septal growth, and the bulging of the nasal septum is not so apparent. The continuation of the deflection of the structures of the nasal septum, the vomer and the premaxilla are apparent in alteration of the form of the philtrum of the lip, and the columna of the nose, which are correspondingly turned away from the affected side. The alar cartilages on the side of the fissure are spread out and flattened. Occasionally this is so marked that the convexity of the natural outline of the nostril is reversed, so that there is a concavity instead of the usual rounded, outward curve. All of the cartilaginous structures of the triangular tip of the nose are also bent away from the side of the fissure, and the nasal vestibule at its anterior portion is so flattened that the sides are in contact.

The turbinal bodies of the wide open naris are usually flattened and enlarged. The lateral cartilages also are deformed. There is absence of the floor of the naris on the affected side, while the outline of the naris on the opposite side is altered by the deflection of the cartilaginous nasal structures toward the unaffected side.

In double harelip and cleft palate cases, the fissures extend completely through the hard palate and usually bifurcate in front to follow the probable line of the premaxillary sutures on each side. The premaxillary structures thus deprived of fixation to their rightful articulating surfaces are drawn forward and upward by the anterior attachments to the nose and upper lip. The nasal septum and the vomer become thickened and elongate, thus dividing the palatal fissure until it has the appearance of two fissures.

The alae on both sides are flattened and spread out, and the columna of the nose foreshortened or almost totally undeveloped, so that the philtrum of the upper lip in some cases appears to be like a continuation of the cartilages of the nose—so much so that if the deformity remains uncorrected until after the eruption of the incisor teeth, these have the appearance of growing out from the end of the nose. The lesser degrees of fissure of the lip and palate have correspondingly less associated deformities, but even the slightest of these has some trace of tendency to the characteristic defects. When only the lip is affected or if fissure exists, it is at least no more than a slight division through the alveolar ridge; the palate not being cleft, there is the same deflection and projection as described for third degree single and double fissured cases, but the asymmetry is not so marked.

The somewhat rare central cleft through lip and palate is sometimes only an almost complete absence of the premaxilla which gives this appearance, but occasionally the fissure extends directly through the central intermaxillary suture, and in these cases the defect is also continued through the nose so that there is a decided depression between the lateral cartilages at the tip of the nose, caused, no doubt, by the arrested development of the cartilaginous septum, which should extend between these cartilages.

TWO GENERAL DIVISIONS OF THE REQUIREMENTS FOR SURGICAL CORRECTION

It is at once apparent to one who studies these cases that there are two elements to be considered in attempting their correction:

1. Arrest of development, which has created the deformity and the deformed appearance of otherwise normal structures through malposition.

2. Perverted growth, evidenced by increase or decrease in the size of the parts influenced by malposition and the consequent alteration of functional activities. For example, the exposed lower border of the nasal septum and the vomer in double cleft palate and harelip cases of third degree is often almost as thick as a little finger instead of a narrow dividing line, as in normal cases, while the columna of the nose is sometimes so shortened as barely to be distinguishable from the lip and nose to which it is attached.

It therefore follows that surgical correction must contemplate not only the readjustment of the parts to their rightful positions, but also the restoration of functional activities in such a manner as to give hope for continued constructive growth improvement. Inevitably there will be a tendency to progressive increase of the defect when this is not properly accomplished, or when there has been misplacement of parts in an endeavor to supply tissue to close the fissure by the use of other, though perhaps adjacent, anatomic structures or the destruction by reflection or excision of tissues that appear to be redundant, but which are really needed for proper corrective purposes when growth readjustment may have taken place. This is exemplified in the deplorable results of complete excision of the projecting premaxilla to permit closing the lip fissure, or the removal of all or part of the philtrum of the lip and uniting the sides of the lip fissure borders in the central line, or freshening the prolabial borders of the philtrum of the lip and attaching thereto flaps from borders of the outside segments of the lip, resulting, as this treatment so often does, in the long inward drawn upper lip, with a puckering string effect during laughter, which tends steadily to increase the defective appearance of the mouth.

It seems to be necessary to outline the foregoing elementary principles in order that the effects of failure to harmonize these influences or their operative violation as indicated by the accompanying illustrations of clinical examples of such cases may be fully understood.

ENUMERATION OF SOME OF THE CHIEF PRECAUTIONS TO BE EXERCISED IN PERFORMING FIRST OPERATIONS FOR HARELIP

Briefly stated, the most notable of the vitally necessary operative considerations for first treatment may be thus enumerated:

The so-called very simple cases of first degree lip fissures without cleft of the soft palate are often the most difficult because of the greater degree of accuracy required in adjustment of the prolabial border at the junction of skin and mucous membrane, the length of the lip at the lower border of the prolabial outline, preservation of the cosmetic effect of the outward roll of the lip border, and the correction of the size of the outward opening of the naris on the affected side which may be required in slight degree, although the naris is not directly included in the defect. The reason for this extreme care is that in cases of wide open third degree fissures the altered relation of the cartilaginous and bony parts continues to improve for some time after operation, and in this way slight operative imperfections may become less noticeable, whereas the fixed relation of the fully developed jaw when only the lip is involved makes such compensatory readjustment impossible.

Fig. 1.—Child with single harelip with palate intact, before and after operation as described in text.

Avoid Making Lip too Long.—Under no circumstances should the lip be made too long. If absolute accuracy is impossible through unusual width of fissure or because the amount of available tissue is too scant or the nose too much deflected or for some other reason, then the lip should be left a little short until such time as subsequent growth may give sufficient surface of lip tissue to permit suitable lengthening. Figure 2 is an example of this principle. When the lip is too long, the defect has a tendency to increase as time goes on, and its symmetrical shortening becomes a matter of considerable difficulty in many cases.

Care Necessary in Suturing Fissure Along the Floor of the Nose.—It is often difficult to determine just how far back the tissues along the floor of the nose should be closed by suturing in the line of the fissure. If done at the time of the first closure of the lip fissure, there is danger of giving a straight up and down appearance which looks like an elongated lip owing to the obliteration or at least the absence of the ridge where the nasolabial outline of the lower border of the external naris has been effaced, and this defect is particularly hard to overcome when further correction is required. On the other hand, if not sutured sufficiently high up, the drawing apart of the walls along the floor of the naris will be likely to cause an unsightly opening. Not infrequently, the intranasal sutures should be placed at a subsequent operation after the lip wound has closed and when the final adjustment of the parts will favor greater accuracy than is practicable when the lip fissure is first closed.

Straightening the Nasal Septum.—The deflection of the nasal septum due to the attachment of its lower border to the deformed premaxilla requires immediate attention when harelip cheiloplasty is performed, because the persistence of the defect, with its usual tendency to increase as later growth takes place, will materially increase the irregularity of the nasal and oral outlines. Careful judgment is often required to decide whether the attachment of the divided lip muscles and the consequent corrective influences of associated muscular activity will be sufficient to produce the necessary straightening effect as time goes on, or if radical operation to straighten this bent nasal dividing wall will be required to give the desired cosmetic effect.

Combination of Splint to Straighten Nasal Septum and Tension Suture.—My own rule of practice in all third degree cases, as previously described in my book and in other articles, is to place a metal splint against the nasal septum on the opposite side from the fissure. This is attached to a silkworm-gut suture that is carried across below the naris and out through the skin surface on the affected side at a point just below the outer angle of the ala, and secured by a metal button placed over adhesive plaster laid on the skin. The flattened alar cartilages are thus rounded up, the divided parts held in close contact, and tension relieved in a very considerable degree. At the same time, it quite naturally brings the nasal septum into better alinement. When the fissure is unusually wide, the suture tension alone may not be sufficient to give the necessary septal correction. It is then advisable to free the lower border of the septum along the line of its maxillary attachment by raising the lip and carrying a knife through the septum straight backward in a line parallel with the plane of the floor of the naris far enough to give the necessary liberation to permit the desired straightening effect when drawn under the tension of the splint suture.

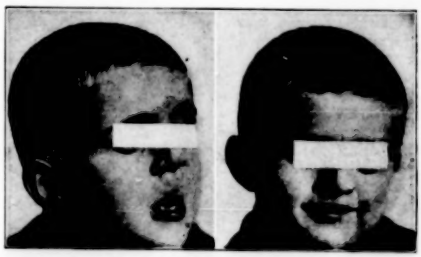

Fig. 2.—Result of a lip's being made too long, with a puckering string effect through being too tight at the prolabial outline; before and after reconstruction.

Retraction of the Premaxilla.—In forcing the projecting premaxilla into better alinement at the time of operation, great care should be exercised not to injure the developing tooth germs contained therein. Destruction of any unerupted dental organs means more or less permanent injury to the symmetrical growth of the parts; their displacement causes teeth to erupt in unusual situations such as the nose, central portion of the palate and other situations which prevent the formation of the natural outlines of the lip and jaw. This is especially true when the premaxilla is bent back into the anterior part of the palate, as so often occurs when double harelip operations are performed. In these cases both nose and mouth are deformed and only long, patient treatment can restore the horizontally placed

Fig. 3.—Evidence from a patient in infancy, at 2½ and at 17 years of age, proving that correct approximation in infancy leads to continued improvement in appearance of both nose and lip as growth progresses.

incisors from the palate to their proper situations in the alveolar ridge with corresponding restoration of nasal and labial outlines. Care must be taken not to make the naris too small. If it is impracticable to make its size and outline quite perfect, then it should be remembered that a large naris may be made smaller quite easily, but a naris that is too small is not so easily corrected.

CORRECTION OF DEFECTS FROM PREVIOUS OPERATIONS

The defective results of early harelip operations are so great in their variety that it would be useless to attempt a complete classification; but, judged from a corrective point of view, they may be clinically grouped into four general divisions with certain important subdivisions of each:

1. Those cases in which necessary parts are missing and which require replacement either by grafting or by the aid of artificial substitutes to give the desired restoration.

2. Unsightly conditions caused by increased growth which require the removal of redundant tissue for their cosmetic improvement.

3. Scars and deformities of outline that may be satisfactorily corrected by excision of the scar tissue, and proper approximation of the ill formed surfaces.

4. Misplaced structures that require readjustment.

Any or all of the foregoing defects may be present in a single case.

Lip too Long.—The shortening of an elongated indrawn upper lip, such as is shown in Figure 2, is a rather more difficult operative procedure than might be expected.

With pencil and paper and all favorable conditions to one who is not an artist, it is not easy to draw an exactly perfect outline of a complete upper lip border from one end of the mouth to the other, and the difficulties are immeasurably increased when the instrument is a knife and the surface an elastic tissue, unequally toughened by old scars, that retracts on incision and therefore becomes at once a disconcerting factor, as the form of the incision is immediately disarranged as the knife is drawn through. Add to this the fact that the slightest inequality which might make the lip uneven could give a most disastrously unsightly result, and also the uncertainty of the effect of muscular activity when smiling, and otherwise changing the cosmetic effect of the expression of the mouth, and the necessity for cautious procedure becomes apparent.

The best results in my cases have been secured by the excision of tissue just above the prolabial border so that no perceptible scar will be apparent, because the line of union will be where there is always a distinctive demarcation at the junction of skin and mucous membrane.

The incision is made to slant obliquely from the skin surface downward toward the mucous membrane in order to thicken the lip as the prolabium is drawn up over the deeper tissues where approximation is accomplished. The natural outward roll is thus restored. After several months an additional correction can be made in the same manner and still greater perfection secured. In this way, by cautious procedure, the danger of unevenness or cutting away too much may be avoided and a satisfactory labial expression secured.

Philtrum of Lip Destroyed.—When absence of the philtrum with exposure of the lower border of the nasal septum (as in Figure 4) results from previous harelip or cleft palate operations, it is usually complicated by the loss of more or less of the underlying structures

Fig. 4.—Case in which the columna of the nose and the premaxillary bone structures were destroyed at early infancy operation for harelip and cleft palate, before and after correction as described in text.

that support the lip. The operations that were responsible not infrequently destroyed, totally or partially, the premaxilla, or the lateral divisions of the fissured palate have been compressed to such an extent that muscular action has become so disarranged that it draws the lip downward and inward, and the difficulties of correction are thus correspondingly increased.

As the exposed border of the cartilaginous nasal septum does not offer a well vascularized surface for the attachment of tissue that may be placed over it to form a substitute for the lost columna, support must be given for a considerable time in order to prevent the disastrous effect of the antagonistic muscles. This can be done very satisfactorily by having a vulcanite support for the lip attached to a plate fitted to the mouth and

extending up under the upper lip as far as may be necessary to hold the lip upward and outward. This should be prepared and ready to insert as soon as the sutures are removed in order to obviate the stretching under tension as the lip sags when the muscles drag downward unless held up. Usually advantage can be taken of the unusual length of the upper lip by making an incision just below the nose, curved downward to follow the outline of the naris on each side, with an intervening extension forward which can be carried up from the lip after free dissection, to be attached to the nasal cartilage, thus serving the double purpose of supplying the lost columna to the nose and shortening the upper lip.

Philtrum of the Lip Misplaced.—The unnecessary transfer of a portion of the philtrum of the lip, in order to supply what seems to be a necessary addition to the columna of the nose at early operation, invariably results in injury to both without improving the appearance of the defect. In infancy, tissues look much the same; but, as individuals grow older, the discrepancy becomes very marked if tissues are misplaced. Although the tip of the nose may seem to be quite flattened and pulled down when the lip fissures are closed without immediate lengthening of the columna structures, this defect invariably corrects itself by forced growth through the resilience of the nasal cartilages, and in time a well formed nose may be expected without permanent injury to the lip. In cases such as are shown in Figure 5, restoration of the parts to their normal situation should be accomplished as nearly as possible, and any remaining portion of lip tissue that it may be inadvisable to move from the region of the nasal columna should be shaped and disguised by operative steps to improve the cosmetic appearance if possible.

Fig. 5.—Infant with double harelip and cleft palate before and after operation, showing tendency to improvement in the nasal form when the prolabium is properly adjusted in harelip operation as described in the text.

Enlarged, Widespread Nasal Cartilage.—Large, fleshy looking noses are not uncommon results of early wrong treatment. In these cases the lateral cartilages are enlarged and spread apart, and there is a tendency to droop on one or both sides of the tip of the nose, especially when there is a dipping down of the central lower part of the columna on one side which has become unduly thickened and distorted. In almost all of these cases the anterior border of the nasal septum does not keep pace with the increase of the deformed condition of the lateral cartilages and their cellular tissue attachments. This results in a groove through the center of the tip of the nose and a general asymmetrical nasal appearance which is often very disfiguring. Much improvement in the appearance of these noses may be made by freshening the intranasal walls of the vestibula at the anterior portion of the nose and removing a sufficient amount of redundant cartilage to give the necessary regular outline and the required narrow appearance to the nose. The parts are kept in contact with a through and through suture secured by adhesive plaster on the skin, overlaid by metal buttons and retained long enough to prevent spreading out by the natural resilience of the liberated cartilages. The results in these cases are sometimes very gratifying.

Deflection Without Compensatory Enlargement of the Nasal Cartilages.—Deflection of the tip of the nose, if it continues after there has been the utmost correction of the lip and the alae and cannot be overcome by further tissue excision, should be straightened by inserting a rib cartilage graft. This may be done through an incision on the inside of the nose to avoid external scar.

Plastic Operative Improvement of Old Scars.—The removal of scars and the readjustment of lip fissures involve simple plastic surgical procedures, and deserve at this time only the suggestion that the operator must constantly keep in mind the fact that on his ability to restore correct muscular action by careful coaptation will depend not only the appearance of the lip but also the future form of surrounding structures and therefore facial expression.

The Nasal Results of Harelip Operation as a Factor in the Speech Results of Cleft Palate Cases.—Much might be said with regard to the influences of the effect of the proper or improper treatment of intranasal structures or the influence of the result of extranasal treatment in harelip operations as affecting the ultimate speech results in cleft palate cases. Undoubtedly this factor can hardly be overestimated in its speech relation.

SUMMARY

1. The success of the surgical treatment of harelip cases depends on the accuracy with which normal anatomic and physiologic conditions may be restored thereby.

2. Under no circumstances should natural anatomic relations be disturbed in an effort to close lip fissures by transposing tissues or destroying underlying bone structure.

3. Step operations are preferable whenever it is necessary to foster the development of insufficient tissue in order to make possible greater perfection later on.

4. The improvement of unsightly results from previous operative treatment requires not only the excision of unsightly scars and corrective improvement in approximation, but also reconstructive alteration by removing redundant tissue and the insertion of grafts or artificial substitutes to give symmetrical outlines when important parts have been destroyed.

Scope of Mental Hygiene.—In the broadest sense mental hygiene touches everything that affects the mind of man—it is as broad as life itself; but specifically it means measures for the mental health of the individual. Mental health means not merely freedom from mental disease; it means a sound and active personality with powers of self-control and adaptation.—M. C. Jarrett, *Hosp. Social Service* **36**:361 (May) 1921.

PLASTIC SURGERY OF THE LIP*

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The war is over and little of the surgical work connected with it remains to be done, so that I have some hesitancy in presenting a paper and cases based largely on war experiences. However, since there were presented problems far more difficult and complicated than those usually encountered in civilian practice, and since they were presented in so great a number, there was afforded unusual opportunity for selecting methods from the great mass of work done through many years by civilian plastic surgeons; the success of which could be observed in a large number of cases. We can, therefore, hope that we may be able to apply to our civilian plastic work a better selection of operations, based on a comparison of the methods and modifications thereof demonstrated as possible in the war.

Fig. 1 (Case 1). — Extensive laceration and destruction of middle part of upper lip.

Fig. 2 (Case 1). — Line of incision for flaps in type of cases in which there is considerable loss of tissue in the vicinity of the median line of the lip.

Fig. 3 (Case 1).—Final appearance of patient shown in Figure 1 and operated on according to the diagram in Figure 2.

To cover in the time allotted the entire field of plastic reconstruction of the face or even one of its features would be impossible; therefore, it is my intention to limit this paper to operations of the lip, and that only in a very general way.

First, a word about sepsis. As you know, wounds of the face involving the mouth and nasal cavities are invariably infected. From the point of view of scar formation the earlier an injury can be sutured after its reception the better it would seem that the results ought to be; but it is my experience that, whereas the closing of simple tears or lacerations not involving bony injury and the preliminary suturing of radiating wounds is often helpful, no serious plastic operation ought to be attempted before sepsis is controlled and the maximum vascularity of the tissues involved is obtained.

After sepsis has been controlled there will be, in cases of gross laceration, radiating scars extending into the deep tissues causing extensive distortion. These scars, besides being a serious handicap to maximum cosmetic results, jeopardize the success of an otherwise good operation, limiting to a large extent, as they do, the blood supply to the affected parts and forcing the surgeon to change the plan of operation from a simple procedure to a more complicated one. It is, therefore, often necessary to excise the scar to have healthy tissue approximated, and then wait for healing before the main operation is attempted. The presence of such tissue must be taken into consideration in planning an operation, for it is obvious that successful transposition of living tissue requires ample blood supply.

My next point I cannot too strongly emphasize—the utter futility of attempting the reconstruction of the soft tissues until either the underlying supporting structures have been put into proper relation with each other and with the face as a whole, or else adequate mechanical appliances accurately reproducing the lost bony tissue have been substituted. Where there is loss of bony structure, neither adequate functional nor successful cosmetic results can be attained from plastic operations alone.

Inadequate foresight in plastic work invariably brings endless difficulties and mediocre results. One must have in mind from the first the desired results to be obtained and the probable steps necessary for their accomplishment, whether it can be obtained in one or a series of operations. All preliminary operations should lead up to and favor the main procedure. This preliminary mapping out should be based on a most careful study of many points. The following are the chief to be observed:

1. How large is the actual amount of tissue lost?
2. How great and in what direction is the existing tissue distorted?
3. From what direction and how adequate is the blood supply to the tissues which can be utilized in the operation?
4. How much elasticity does the tissue to be used possess?
5. What are the normal proportions of the lips to each other and to the general expression of the face?

* Read before the Section on Stomatology at the Seventy-Second Annual Session of the American Medical Association, Boston, June, 1921.

6. From where and what shape and size should the flaps be taken?

The answer to the first of these problems must be determined on the merits of the individual case, but certain generalizations can be made on the selection of flaps to be used to supply the missing tissue.

In any plastic work, two possible fields for supplying tissue present themselves. They may be taken from the immediate vicinity of the gap to be filled or from more distant parts, from which they can be transferred directly or indirectly to the desired location. In most operations of the lip, the former course commends itself and is more generally used. The simplicity of this procedure favors it. There is usually an adequate supply of available tissue and, most important of all, the texture of the lost part is more nearly preserved.

In determining the size and shape of the flap to be used, account must be taken of the extent of the gap,

Fig. 4.—Case of considerable destruction of the middle part of the lower lip. The reconstruction of the lip is done with two sets of flaps. The upper rectangular flap includes the entire thickness of the lip, both skin and mucous membrane. The lower flap includes only the skin and is intended to support the lip and prevent downward contraction.

Fig. 5.—Destruction of greater portion of lower lip and part of chin, with extensive comminution of the mandible.

Fig. 6 (Case 2).—Later condition of patient, just before plastic operation.

and allowance made for the subsequent contraction of the tissues. If there is loss of mucous membrane, this should always be included in the flap.

The method of choice in most cases is to take flaps from the immediate proximity. There is a great temptation to approximate the borders of the wound instead of making flaps, but results do not justify this method for more than slight injuries. Where this is done, the resulting tenseness of the lip makes it entirely disproportionate to the other, thus destroying the general outline of the mouth and distorting the angles. On the other hand, the transposition of flaps makes available a greater amount of tissue, thus avoiding these difficulties.

While no definite classification of injuries to the lip can be made here, for purposes of clearness the following division into groups is helpful: (1) moderate loss of tissue in the vicinity of the median line of either the upper or lower lip; (2) injuries with extensive unilateral destruction; (3) injuries with extensive bilateral destruction, and (4) deformities at the corners of the mouth.

LOSS OF TISSUE NEAR MEDIAN LINE

The loss of tissue at the middle of the upper lip leaves the borders of the remaining parts moderately free (Fig. 1). This gradually contracts upward, leaving, finally, a triangular gap with more or less uniform amount of tissue on either side, characteristic of this sort of lesion. For the correction of such deformities, one finds many types of operations advocated. They all look good in print, and the beginner is often in doubt as to the choice of procedure. There were a good many opportunities for me to try various methods advocated. I soon found, however, that for an uncomplicated case of this type the most simple and satisfactory one is to take quadrilateral flaps from each side of the gap, each one including the remaining portion of the lip, and such other tissues as are needed from the immediate neighborhood (Fig. 2). This is similar to Brun's operation, varying, however, in that the pedicle is slightly narrower and the outer angle at the apex is more acute to allow for a greater circumference on the outer border of the turn and to make possible an easier approximation of the edges of the resulting gap made by the transposition of the flap. A careful measurement is necessary for the proper size of the flap. Excessive width is preferable to scrimping, for after contraction has taken place the lip can, if necessary, be narrowed to the desired dimensions.

CASE 1.—Private S. was wounded Sept. 8, 1916, and admitted to the hospital, September 11 (Fig. 1). The middle portion of the upper lip was lacerated, and there was some loss of soft tissue. The upper jaw was destroyed from the right cuspid to the left molar region, with free opening to the antrum. October 6, the useless fragments of bone in the area of injury were removed, and a vulcanite splint was constructed to mold the soft tissues, prevent adhesions, and to support the upper lip and cheek. October 30, the upper lip was reconstructed by two rectangular flaps from the immediate proximity of the gap, close to the alae of the nose, as shown in Figure 2. By a second operation the lower border of the lip was trimmed, which shortened the lip to the right proportion. March 5, the patient was supplied with an upper denture of sufficient bulk and proper fulness to hold the natural contour of the soft parts. The appearance at the time of evacuation to England is shown in Figure 3.

In the lower lip a similar injury is encountered. Here, also, the same type of operation can often be used, but in this case there is usually greater contraction than in the upper. All flaps tend to draw back to their original position unless a strong enough force is exerted to prevent it. This is an inherent characteristic of animal tissue. In the upper lip, after the flaps are brought down the position of the base of the nose gives a means of firm support, but those of the lower lip have no such anchorage. In order to eliminate the necessity for further operations to overcome resulting contraction, supporting flaps can be made to cover the raw area formed by the transference of the primary flaps (Fig. 4).

CASE 2.—Private M., wounded, July 30, 1917, and admitted to the hospital, Aug. 1, 1917, had received wounds on both shoulders and the lower part of the face. The face wound was found extensive enough to destroy the greater part of the lower lip. There was also considerable destruction and comminution of the lower jaw. On the left side of the upper lip there was extensive laceration of the soft tissue (Fig. 5).

Fig. 7 (Case 2). — Final condition of patient.

Fig. 8. — Unilateral destruction of the upper lip. In this case one flap was taken from the remaining portion of the upper lip, and the other from the opposite side of the lower lip.

Fig. 9.—Case of complete destruction of the lower lip. Flaps were taken as shown above.

The plastic operation for the reconstruction of the lip was postponed until November 14, three and one-half months after the infliction of the wound. By this time the sepsis had disappeared and the tissues were quite vascular (Fig. 6).

The incisions for the flaps were carried along the same lines as those described above, except that, owing to radiating scar lines, slight modifications were made to preserve the vascularity of all the parts of the flap. In this case I failed to supply supporting skin flaps underneath, and a slight depression in the median line resulted. This, however, was corrected by a secondary operation which consisted in making a horizontal incision entirely through the thickness of the lip and transforming it into a vertical one by sutures (Fig. 7).

INJURIES WITH EXTENSIVE UNILATERAL DESTRUCTION

Quite frequently one finds that the destruction of the lip is unilateral so that while on one side the entire lip is destroyed, there is on the other side a good amount of the original lip tissue present (Fig. 8). It is obvious that if one follows the same procedure here as in the foregoing cases, there will not be a sufficient amount of tissue to make a good restoration. The newly made lip will be tense, while the opposing one will be bagged out and entirely disproportionate to its mate. This is a result often seen after harelip operations.

This serious difficulty may be overcome by reversing the process on the side of the missing tissue, the flap being taken from the opposite lip (Fig. 8). By this method adequate tissue can be secured, while at the same time the uninjured lip is made small enough to harmonize with the other.

When this method of procedure is used, a secondary operation is necessary for correction of the corner of the mouth where the flap is turned from the opposing jaw.

EXTENSIVE BILATERAL DESTRUCTION

Occasionally we have a condition in which there is destruction of the whole lip, often including some of the neighboring tissues. The problem in this case is a complicated one, but I have been able to treat a number of cases quite satisfactorily by taking flaps from the sides of the opposing lip, as illustrated in Figure 9.

This method supplies plenty of tissue, the obvious objection being that the transposition of so much tissue from another locality results in some alteration of the contour of the face. This deformity is more marked when the flaps are taken from the cheek close to the alae of the nose to supply tissue for the lower lip than when the conditions are reversed. The bilateral nature of the operation, however, minimizes the effect of this disturbance of the normal contour of the face.

CASE 3.—Private T. was wounded, Oct. 2, 1916, and admitted to the hospital, October 6. My experience with this case was both interesting and instructive. As seen in Figure 10, the entire lower lip was shot away, and the mandible so comminuted as practically to obliterate the chin.

By the use of appliances assembling the bony fragments, the contour of the mandible was eventually restored (Fig. 11). In an attempt to build a lower lip over this, I first took flaps from the lower part of the face, but soon realized that although this furnished fulness to the chin, the supply of tissue was inadequate to restore the lip. Accordingly, flaps were eventually taken from each side of the upper lip (Fig. 9), with the result shown in Figure 12. It is to be noted that this procedure caused no tension of the upper lip.

CORRECTION OF DEFORMITIES AT THE CORNERS OF THE MOUTH

Careful reconstruction of the corners of the mouth is essential for a thoroughly adequate cosmetic result, for any asymmetry at this point invariably changes the whole expression of a patient's face. Loss of tissue here produces extensive scar formation, the mouth is longer at one end than at the other, and the mobility of the injured corner is so seriously interfered with as to change materially the whole character of the face.

Mere joining of the ends of the two lips falls short of what can and should be accomplished. By excising all scar tissue, joining the corners of the red border together, and then filling in the space left by the excision with supporting flaps from either above or below, or both, all tension can be relieved at the corner and its drawing out of line, which can come so readily from contraction of the tissues, avoided.

Fig. 10 (Case 3).—Patient suffering from complete destruction of lower lip and chin, and extensive comminution and partial destruction of the mandible.

Fig. 11 (Case 3).—Later appearance of patient.

Fig. 12 (Case 3).—Final condition of patient. The lip tissue was supplied mainly by flaps from each side of the upper lip similar to Figure 9.

CASE 4.—Private P. illustrates a case of this kind (Fig. 13). Extensive scar tissue at the corner of the mouth had drawn it badly out of line. Operation consisted in excision of the scar tissue about the corner of the mouth, transposition of a flap, and shortening the upper lip by a V excision at the corner (Fig. 14). Tension on the lower lip was relieved by a horizontal incision across the mucous membrane inside the lip. The result is illustrated by Figure 15.

COMMENT

Deformities of the lips involving loss of tissue almost invariably are accompanied by loss of mucous membrane. The inner lining of the lips, as well as the red border, must always be restored, for, lacking this, distortion within the mouth will mar otherwise good results without. To accomplish this, the method of choice is, of course, to carry the mucous lining of the cheek along with the skin and underlying tissues of the flap. Where this is not possible, reconstruction of this tissue can be made entirely with the mouth, for there is an adequate supply, and the elasticity of the tissue makes repair easier than that of the skin. Care must be exercised, however, for mucous membrane is delicate tissue easily torn, and its blood supply is less generous than that of the skin.

As a method of last resort, where insufficient lining is obtainable, the skin of the neck may be reversed and brought up underneath, or a skin graft made.

While every case of plastic reconstruction must be executed on its own merits, various procedures must be attempted in extreme cases. The methods outlined will only serve to act as a guide, admitting that modification should be made to suit each individual case.

188 Longwood Avenue.

ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. BROWN AND KAZANJIAN

DR. V. P. BLAIR, St. Louis: There is enough tissue in almost all cases of harelip to make a perfect repair. The poor results will depend on the manner in which the nose is adjusted. No matter how perfect the bone adjustment, the soft tissues will determine the ultimate result, and furthermore, the ensemble depends on the relationship of the columella to the point at which the ala is joined to the cheek.

DR. M. I. SCHAMBERG, New York City: The conservation of tissue in the congenital cases is the principal thing, just as in war surgery. There are many ways of reaching the same destination. One man prefers one route, and another prefers one that is very much different. Much damage has been done by men who do not thoroughly understand the principles of correcting these deformities. A great deal of good can be done by not hastily trying to repair the normal appearance. The maxillary tissues often adjust themselves wonderfully well. I want to emphasize the fact that in the past we learned too much about the technic of the different operators that resulted in absolute failure. A great many men throughout the country have been discouraged in their palate work on this account. A great many men have followed the principles laid down by various operators and their cases have been failures. The question of the second, third, fourth and fifth operations that are necessary should be more forcibly brought out by the men who are doing the greatest amount of this work. We all know the difficulties that confront them.

DR. A. J. OCHSNER, Chicago: The work shown is valuable because it shows that you must know what you are about when you begin. All these operations must be planned thoroughly, and in these cases the surgeons have exhibited excellent judgment and artistic sense. Most of this plastic work must be mechanical and artistic. If the surgeon does not possess these qualities, his result will not be satisfactory. The plastic surgeon must be an artist, because one who is not cannot produce artistic results.

DR. FERRIS SMITH, Grand Rapids, Mich.: The problem confronting Dr. Kazanjian is entirely different from the one confronting the men dealing with congenital harelip. I know a great deal about Dr. Kazanjian's work as we were in the same hospital during the war and I saw a great deal of his work. The prosthetic work done by him was one of the classics of the war and represents a principle which ought to be followed very carefully in the repair of this type of case in civil life. Two different schools were represented in the restoration of these cases during the war: First there were surgeons who believed that a wound should be left open for free drainage, permitting it to heal up, then the scar removed and the defect repaired by purely plastic work. Second, there were men who believed in primary repair with free drainage. It seems to me that the last men were right.

Fig. 13 (Case 4).—Deformity of corner of lip due to considerable laceration and the loss of tissue.

Fig. 14 (Case 4).—Diagram showing correction. The scar tissues and a triangular piece from the side of the upper lip were excised; the lower lip was loosened, and the ends of the upper and lower lips were brought together in their proper position. The remaining raw surface was covered by a flap taken from below.

Fig. 15 (Case 4).—Final condition of patient.

In the early days of the war the cases that were left open had the greater defects. The results in the cases of primary suture were much more pleasing. The cases which were repaired by simple plastic method without the use of an external prosthesis suffered from scar contraction. Dr. Brown's paper requires special discussion. The principles involved are well recognized. The choice of a flap, whether ascending or descending, depends on the blood supply, etc. In the case of male patients the flap should be the ascending one so that the hair grows down to form a mustache thus covering the scars that may be unsightly.

DR. W. E. LADD, Boston: We have found in restoring the lip in order to get a good nostril it is necessary to restore the alveolar lines assuming that this is a single type of harelip with a complete cleft palate, as I understand Dr. Brown, he pays very little attention to bringing the premaxillary bones into line before doing the plastic work on the soft parts. In my experience unless the alveolar line is restored it pulls the nostril backward on the affected side. It has been my practice to restore the alveolar line at the time, or preliminary to doing the operation on the soft parts, and it has seemed that this is essential. I think he has brought out a very important point: that the premaxilla should never be destroyed. That can easily be done by introducing too hard a substance, or introducing sutures under tension. In the soft parts I use clamps and make an accurate measurement on both sides with calipers. I make an incision perpendicular to the plane of the face which makes accurate approximation possible. I believe it is quite as important to approximate the tissue on the under surface of the lip as it is to approximate the skin on the outer surface. Failure to do that results in adhesions between the under surface of the lip and the maxillary bone with resulting stiff lip.

DR. J. R. EASTMAN, Indianapolis: I wonder if Dr. Kazanjian has made use of a very simple and useful expedient which was advocated by Dr. Emil Beck to close the defects in the skin after a displacement of the skin for flap purposes, or after destruction of the skin by accident. Dr. Beck suggested the placing of strips of adhesive plaster along the margin of the defect, going clear around the periphery. I have made use of this plan many times and I am sure that one can cover the defect in this way very rapidly. One can by this method avoid the use of the Thiersch graft in many instances where otherwise it would be necessary to use it. The effect is due to the fact that epidermization is hastened by the adhesive straps holding down the exuberant granulations and making the edge perfectly level so that the epithelium can grow out and fill in the defect as in the strapping of ulcers. I do not think that anything is more sure than that the repair of a lip will pull back into alinement the displaced premaxillary bone or that repair of the lip will tend to correct inequalities and irregularities in the alveolar process. I do not understand why any one lays stress on an operative step to draw back an anteriorly displaced half of the alveolar process or the displaced premaxillary bone, because repair of the lip will accomplish that. If by repairing the lip you put such tension on it as to make a deformity I think it is much better to go back afterward and make the final adjustment of the lip than to use a chisel or any sort of an instrument to bring the premaxillary bones into alinement. I like to use silver wire to draw the alae into position because silver wire is not only aseptic and antiseptic but also activates cell growth. I like also the silverized gauze and silverized catgut of Rovsing. I believe silver wire favors tissue regeneration not so much by inhibition of bacterial growth as by stimulation of cell growth.

DR. V. H. KAZANJIAN, Boston: I have not tried the simple yet ingenious method mentioned by Dr. Eastman of applying adhesive plaster about the wounds to stimulate epithelial tissue growth but it seems very easy. If it has the effect of hastening healing and minimizes scar formation, I think it is

worth trying. Dr. Ferris Smith discussed the question of primary suture. I purposely avoided discussing that point in my paper except just to mention it. As he correctly said, there were two schools, one that believed that the wound should be closed immediately, and the other that it should be kept open and sutured after sepsis has disappeared. We know that wounds of the limb or of other parts of the body may be sutured very early, or sometimes kept open for a few days and sutured later after excising lacerated surfaces. That hastens period of healing, but in the mouth or on the face we have a different problem. First of all we have a wound that almost always involves comminution of the bone. Second, we cannot isolate and make it relatively aseptic, therefore I do not think it advisable to suture the wound immediately after injury unless the wound is a simple tear or laceration which does not involve the bony tissue. In most cases where there is a comparatively slight comminution of bone and a great amount of laceration of the tissue but no destruction, one can suture that wound within fifteen days after injury, provided adequate drainage is left to prevent collection of pus. Where we have a definite destruction of tissue I do not see what is gained by suturing or approximating radiating borders preparatory to final operation.

DR. G. V. I. BROWN, Milwaukee: Dr. Blair has spoken of the floor of the nose and the shaping of the alae, and he is undoubtedly right in emphasizing these influences. I try to make every incision just as simple and direct as I can make it. I want just as few angles in a skin incision as possible. The skin border approximations in these cases you saw here were adjusted under a magnifying glass and the sutures were 2,000 fine linen covered with petrolatum. If there are no angles in the line of the approximated surfaces a very nice approximation can be made, but every angle makes it more difficult to make a perfect approximation, not because the parts will not meet in a straight line because they will, but for the reason that there is usually a little surplus tissue that has to be disposed of in one way or another because if not properly cared for there is likely to be an imperfection or at least not a smooth surface. I believe in very wide dissection in order to readjust the ala of the nose. Recently I have found it possible to avoid a wide open incision. I pass a tenotomy knife through under the ala, and with a very wide sweep of the knife, free the tissues and in this manner free enough of the lining of the nose to permit me to bring the parts up to proper form. Dr. Ochsner's ideas as he has expressed them today with regard to the character of this work are very useful for our guidance. Dr. Smith spoke about the difference in cases. That is very true, and yet they are all governed by the same principles. The large war wounds are, of course, quite different in many respects from congenital defects or from strictly developmental defects. One of the things that I have been interested in, as evidenced in Dr. Kazanjian's work, has been that he has fought for the use of nearby tissue. He has not, so far as I know, gone very often to the arm or the leg or some distant part for his flap. He has had the ingenuity to find tissue near by that could be utilized for the necessary repair in nearly every instance. Dr. Eastman spoke of the alveolar ridge being out of place, and he is quite right in this statement. If it were merely a question of the alveolar ridge being out of place it would not matter so much, but other alveolar structures are also out of place when you endeavor to change the posterior portion of the bone to conform to present needs in performing a staphylorrhaphy. If the lip muscles are malposed, when the lip fissure is closed the associated parts will not continue to improve in appearance for they will be out of alignment. But if the right muscular alinement has been made, the muscles will draw the parts back into better positions because they will be in right relation to other parts. If I knew a good way to unite the maxillary bones with safety at this time I would certainly do it, but up to this date I am convinced it cannot be done without harm to future symmetrical development. I have never seen a perfect operative result where this has been done. When I have tried this method the face has always looked flat because the features were out of normal relation to each other.

AN ADULT LIVING CASE OF TOTAL PHOCOMELIA *

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While engaged in the work of rural sanitation of the U. S. Public Health Service in Northeastern Kentucky in the summer of 1917, we came upon a man, aged 29, whose extremities were remarkably abbreviated. As we were soon ordered to another station, time was given for only a fragmentary investigation. In this both the subject and his mother were of the greatest help in the sensible manner in which they furnished information. Later, roentgenograms were secured through the kindness of Dr. M. V. Ziegler of the United States Public Health Service, and Dr. A. R. Quigley of Maysville, Ky. In the preparation of the article, considerable help was given by Drs. A. S. Warthin and Carl V. Weller of the department of pathology of the University of Michigan, and by Dr. R. E. McCotter of the department of anatomy. Reference work was done in the university library.

Fig. 1.—Adult phocomelus.

The malformation seen in this subject evidently falls into the class to which Geoffroy St. Hilaire gave the name phocomelia, from the resemblance of the limbs to those of seals. Strictly speaking, in true phocomelia hands and feet are united directly to the trunk without intermediate segments. Just how closely this case fits the definition will be brought out in the anatomic description, gross as well as roentgenographic. The subjoined report also contains some notes on the subject's personal life, with observations on the frequency of occurrence and on the possible causes of such a monstrosity.

REPORT OF CASE

Gross Description.—Grover Cleveland B—— was about 37½ inches (0.95 meter) tall when standing on the condyles of the femurs. His weight was stated to be about 52 pounds (23.5 kg.); at the time of our visit it was increasing. The head was 18½ inches (47 cm.) in circumference. In general it seemed normal, except for a rather high arched palate, and a mouth-breathing habit which can be detected in Figure 1. The nose was not examined; the tonsils were normal. The

* From the Pathological Laboratory of the University of Michigan.

right clavicle was broken in 1916. The trunk was fairly normal, though reduced in dimensions. Some lateral curvature of the spine, with concavity to the right, was noticeable, especially from the rear. The heart was normal to palpation. The abdomen was strangely rigid and tense throughout. The external genitals were normal, the left testicle being slightly larger. He had had nocturnal emissions since about the age of 13. The foreskin was absent, since birth, the mother stated, as was the case with her two other monster children.

The arms were alike, the left being slightly longer and larger. From shoulder to tip of finger measured 8 inches (20 cm.). The three fingers of each hand (the thumb and the little finger were absent from both) were from 1¾ to 2 inches (47 to 50 mm.) in length. Some movement was possible at the joints, with the greatest amount at the shoulders. The exact structure of the arms and shoulders could not be determined by palpation. The legs were in general similar, yet they presented some variations. The left was much larger; this difference was probably associated with the scoliosis and the inequality evident in the lower abdomen and pelvis. There was free movement of both limbs at the hips. The only other movable joint was best seen in the right leg, at the first break below the hip. There some anteroposterior swinging was possible. The feet were misshapen, though largely normal; they were from 6 to 6½ inches (15.24 to 16.50 cm.) long. The toes were normal, except for the syndactylism between the fourth and fifth on each foot.

Roentgenograms.—The roentgenograms first taken were flat plates. Later endeavor was made to secure stereoscopic roentgenograms; but the departure of the Public Health Service force from the county prevented this. The three here reproduced present several features that will not permit of definite interpretation. But with the aid of Dr. R. E. McCotter, the following conclusions have been worked out:

Figure 2 is of the right shoulder, taken apparently from in front with the focus on the posterior rib lines. The three median metacarpals are present, with the corresponding proximal phalanges. The carpus is represented by one bone in

Fig. 2.—Right shoulder: bones of arm and forearm absent.

the proximal row, probably the lunate, and by two in the distal, the capitate and hamate or unciform. From the size, position and length of the two longer bones at the top of the plate, pointing upward and to the left, it would appear that the clavicle is in two fragments. This conclusion is supported by the history of a fracture. That this was oblique is shown by the tapering in thickness of the free end of the proximal fragment. This medial segment has been lifted up by the sternocleidomastoid muscle. The distal segment, which shows the characteristic broadening of the clavicle at its scapular end, is pulled in and up by the trapezius, opposed only by a poorly developed pectoralis minor.

Fig. 3.—Left leg: tibia and fibula absent, the tarsal bones articulating with the femur.

The other two bony masses of the shoulder are more difficult to interpret. The lower, seemingly articulating with the carpus, is a bone of considerable density and strength, or possibly a thin bone photographed on edge. It is roughly in the shape of a bow, with knobbed ends, and a broad spine or projection on its upper and convex surface. The distal end seems more anterior and in focus. The other bone, above and medial to the preceding one, is thinner and flatter. It is roughly pentagonal, with a projection from its superior median angle. Both masses are roughly dorsolateral to the trunk. From this position, and from the fact that they bear no resemblance to the bones of the arm or forearm or any subdivision thereof, we conclude that they are probably portions of the scapula.

Figure 3 is a picture of the left leg, taken from the posterior side. The long bone or femur shows a prominent protuberance jutting out from the position normally occupied by the internal condyle. Since there is no line of fusion between this protuberance and the shaft, we believe that it is an exostosis. The lateral condyle is enlarged, and the intercondylar fossa is displaced medially. There is no suggestion of a tibia or a fibula. The tarsus seemingly shows the presence of first, second and third cuneiforms, cuboid, navicular, calcaneus—all of the normal bones except the talus. The five metatarsals are shown in order, with the edges of the proximal phalanges appearing in the cut.

Figure 4 is a similar picture of the right leg, taken posteriorly. This femur shows clearly the intimate connection of the exostosis of the medial condyle with the body of the bone. The light streak in the large bone of the tarsus does not, we believe, suggest a partially fused tibia and fibula.

There are no markings indicating the bones of the leg. As nearly as can be determined, only the bones of the tarsus, with the exception of the talus, are present.

Personal Notes.—Grover had spent only two or three months at nearby country schools, with little teaching at home. He did not want to learn out of books. Either he could not concentrate, or he did not wish to do so; at any rate no one thought it necessary that he should. He can barely read, and is able to write his name only with difficulty. He votes in every election. Before going to the polls he has the names of the candidates read to him, and usually knows before leaving home for whom he is going to vote. Judges mark the ballot for him as for any illiterate voter. Most children like him, after getting over their initial fear of something strange. At the time of our visit he was talking with a younger brother and a neighbor boy, both about 13 years old. When the roentgenogram was to be made, he was found at a nearby "camp meeting." He is not quarrelsome, but is quite good natured. Roughly, his intelligence would be classed as approximately that of a boy of 12.

Cleve, as he is also called, takes care of himself fairly well. He waddles about on his condyles, getting up and down steps without difficulty. In 1917 his increase in weight was making it more difficult for him to get about. We saw him climb into a chair, with the the aid of a nearby table; his arms helped him about as much as do the fins of trained seals. He washes and feeds himself. He shaves with a safety razor weekly; the photograph gives a suggestion of the black growth present at the time. In dressing he gets on his trousers by himself, but has to be helped with his shirt.

Family History.—No other abnormal births are to be found in the numerous B—— family in the neighborhood, nor have any occurred in the family of Mrs. B——. It is worth noting that the father and mother were double first cousins. Therefore, instead of the normal number of eight great grandparents, Grover Cleveland had only four. His father, who was a man of ordinary health, died in 1912 of paralysis following "typhoid." Mrs. B—— was born in 1866 and married in 1885. She bore eight children, five normal and three monstrous. All but the fifth were nine months babies. Her progeny consisted of: April 30, 1886, a boy, normally shaped, living; June 16, 1888, Grover Cleveland; June 5, 1890, a boy, normal, living; March 24, 1893, a girl, normal, living; 1895, a stillbirth, anatomically exactly like G. C. B., but an eight months child; June 17, 1897, a boy, like G. C. B., with the addition of a harelip; when 2 years old, he died of pneumonia, following measles; July 19, 1900, a girl, normal, living; Jan. 11, 1904, a boy, normal—a bright chap whom we saw.

Fig. 4.—Right leg: tibia and fibula absent; tarsal bones articulating with femur.

COMMENT

The recurrence of this condition makes it very interesting. Meckel [1] quotes Flachsland's account of a woman who in three years bore three children without lower arms or legs, but with normal hands and feet. There are frequent instances in which a solitary monster appears among normal children, or when a normal child is followed by a series of malformations. But so thorough a mixture of normal and abnormal as we have here is rare indeed.

PHOCOMELIA

In his classic Treatise on Teratology, Geoffroy St. Hilaire [2] divided malformations of the extremities into three classes: (1) phocomelia, the condition in which hands and feet insert directly on the trunk, without intermediate segments; (2) hemimelia, in which arm and leg are normal, but the digits are either absent or imperfect, and (3) ectromelia, in which the limb is either almost absent or entirely so. These defects may be present in only one limb, in two, in three or in all four. As St. Hilaire points out, lines cannot be drawn sharply. The great variety of abnormal forms makes them shade gradually from one group into another. We can only place each in the class where it most nearly fits.

It is evident that, strictly speaking, our subject is not a total phocomelus, since both femurs are present and well developed. But since there is little evidence of the presence of any humerus, radius, ulna, tibia or fibula, we believe that he most nearly fits into this class. The lack of a talus is merely incidental. It is worth noting that Weencke [3] reports the similar absence of this bone in a phocomelus of one leg.

The literature of teratology fails to reveal a single recorded instance of perfect phocomelia of all four limbs. Cases of such an abnormality of one member alone are common enough, though strangely, St. Hilaire (1836) stated that he knew of no authentic instance. Complete double phocomelia of either arms or legs (there is no case we can find recorded of one arm and one leg being affected together) is also relatively frequent. But very rarely do we find the malformation affecting all four limbs, and none in which the long bones are entirely absent.

The most famous instance, quoted wherever disturbances of development of the extremities are discussed, is that of Marco Catozzo, or "Pepin," who died in Paris in 1800 at the age of 62. His skeleton and a cast are preserved in the Musée Dupuytren at Paris.

1. Meckel, J. F.: Handbuch der path. Anat., Leipzig, 1812, pp. 15, 748.

2. St. Hilaire, Geoffroy: Traité de tératologie, Paris 2: 206-215, 1836.

3. Weencke, R.: Chondrodystrophie als Ursache der Phokomelie, München, 1907.

Socin [4] has a full description gained from Dumeril and a study of the skeleton. The scapula is imperfect. There is no upper or lower arm, though Dumeril mentions a long bone between hand and shoulder. This also appears in Hirst's [5] illustration of the skeleton. In the legs each femur is small, but has a well formed head and suggestions of the trochanters. There is a short, curved bone which may be a tibia. Hands and feet are normal. Catozzo was quite a clever man, traveling over Europe on foot or on horseback, and speaking and writing four languages.

The "Baerenweib," much discussed by German writers, was more normal anatomically. Alice Vance was a mulatto born in Texas in 1874, and later living in Berlin. The best descriptions are those of Daffner [6] and Klaussner.[7] Her radii and ulnae were about 6 cm. in length; the tibiae were represented by condyles alone, and no fibula was present. Her mother had been similarly formed, but a sister and Alice's one child were normal. When on all fours the woman was a striking specimen of a "Baerenweib," and was evidently a side show feature.

Orgler [8] reports a similar case of a man, aged 65, whose lower arm was only 13 cm. in length. Each hand lacked a thumb, and the carpus seemingly lacked the greater multangular. Between the femur and the tarsus was only a bit of a shadow. The man had fourteen sound sisters.

St. Hilaire classes phocomelia as a viable monstrosity, but for some reason many of the subjects reported were born dead, or did not long survive. Socin's case, reported in detail, is that of a child who died seventeen days after birth, of congenital syphilis. The scapulae were rudimentary. Only two small bones stood between each shoulder and the carpus. The latter part was cartilaginous, indefinitely divided. There were four metacarpals and four phalanges. Below, the scrotum and part of the bony pelvis were lacking, with no trace of the upper or lower leg. There were no other cases in this family.

Hirst shows a photograph of a three toed fetus which apparently lacked lower leg and any arm at all. The hands seemingly were attached directly to the shoulder. McDougall's case also apparently lacked thigh and upper arms. From this state on more and more instances are found of lesser degrees of this monstrosity. Undoubtedly other instances have occurred. Many have not been reported; and perhaps some others are recorded in journals to which we do not have access.

CAUSES OF PHOCOMELIA

Why should the distal portion of the limb—the hand or the foot—proceed to perfect development, and the proximal and middle segments fail to do so? One school of German authorities for a long time dwelt on the ideas of fetal rickets or chondrodystrophy. But it is evident that these would explain only imperfect bones, not their absence. Furthermore, these terms are only those of processes. What are the fundamental forces back of them? Possible causes for such a viable malformation as phocomelia may be grouped as: (1) extrinsic: (*a*) trauma; (*b*) amniotic bands; (*c*) uterine compression, general or local; (*d*) maternal toxins, and (2) intrinsic.

We must conclude that in such cases as we have here the cause for the monstrosity is intrinsic. It may be the result of the action of some toxin on maternal or paternal germ cells. It may be the influence of consanguinity making itself felt at the rearrangement of the chromosomes. It may be due to some altogether unknown influence. But whatever the force may be, it seems imperative that it act, not on the developing embryo, but on the germ plasm of its ancestors.

4. Socin, Hélène: La morphologie de la phocomélie, Arch. exper. méd. et d'anat. path., 1917, No. 5, pp. 485-533.
5. Hirst, B. C.: A Phocomelic Monster, Univ. M. Mag. **2**: 374, 1889.
6. Daffner, F.: Das Baerenweib, München. med. Wchnschr., 1889, No. 25.
7. Klaussner: Missbildungen der menschlichen Gliedmassen, Wiesbaden, 1900, pp. 67 ff.
8. Orgler: Demonstration der Radiogramme eines Falles von Phocomelie, Deutsche Med. Wchnschr. **26**: 293, 1900.

CULTIVATION OF RICKETTSIA-LIKE BODIES IN TYPHUS FEVER *

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In previous publications from this laboratory,[1] the isolation of an anaerobic gram-positive bacillus from the blood in typhus fever was reported, together with considerable serologic and experimental evidence, which tended to support the view that this organism played an important causative rôle in the disease. The mass of evidence adduced by Plotz, Olitsky and Baehr, and especially the cultivation of the Plotz organism by Olitsky, Denzer and Husk from typhus infected lice, lent confirmation to the opinion that the organism bore an important relationship to typhus fever. Because of the usual lack of virulence of the Plotz bacillus, which prevented the completion of cross immunity experiments, and because of the newer investigations of da Rocha-Lima [2] and Prowazek, the subject was again taken up at the first opportunity of obtaining material from cases of epidemic typhus fever.

Da Rocha-Lima and others recorded the constant finding of minute bodies in the stomach wall of typhus infected lice, to which the name Rickettsia prowazeki was given. The nature of these bodies, whether protozoan or bacterial, is still undetermined; and, in view of the fact that no one has as yet succeeded in cultivating them outside the body, a comparison with the Plotz organism has been impossible. The differences observed were chiefly tinctorial.

The present observations were undertaken in January, 1921, using additional bacteriologic methods. The opportunity to make observations on the European epidemic disease in newly arrived immigrants was afforded us by Dr. Cofer, then health officer of the Port of New York, and by Dr. J. Holt Harris, in charge of the Quarantine Station.

With the methods subsequently to be described, we have succeeded in recovering from the blood of typhus fever patients minute bodies which are morphologically and tinctorially similar to Rickettsia prowazeki. Subsequently, these bodies were also cultivated from the blood, brain and kidneys of guinea-pigs, reacting to

* From the Department of Pathology, Mount Sinai Hospital.
* Work done under the tenure of a George Blumenthal, Jr., fellowship in pathology, assisted by a grant from a special research fund.
1. Plotz, Harry: The Etiology of Typhus Fever (and of Brill's Disease), J. A. M. A. **82**: 1556 (May 16) 1914. Plotz, Olitzky and Baehr: J. Infect. Dis. **17**: 1, 1915. Olitzky, Denzer and Husk: Ibid. **19**: 811 (Dec.) 1916. Denzer and Olitsky: Ibid. **20**: 99 (Jan.) 1917. Baehr and Plotz: Ibid. **20**: 201 (Feb.) 1917. Baehr: Ibid. **21**: 21 (July), 132 (Aug.) 1917.
2. Da Rocha-Lima: Arch. f. Schiffs- u. Tropen-Hyg. **20**: 17, 1916.

the inoculation of blood from typhus fever patients suffering with the endemic (Brill's disease) or epidemic form of the disease.

Through the kindness of Dr. S. B. Wolbach, similar studies were carried out on a strain of typhus virus originally obtained in Poland and kept alive by means of numerous successive passages through animals. The same Rickettsia-like bodies were isolated from the blood, brain and kidneys of guinea-pigs suffering from the experimental disease induced by this Polish virus.

Lastly, the organisms have been repeatedly recovered from the blood, brain and kidneys of guinea-pigs in which the disease had been produced by a previous intraperitoneal inoculation of culture material.

METHODS

Blood Cultures.—Deep tubes, 1.25 by 20 cm. (Noguchi), containing 10 c.c. of a rich ascitic fluid and a fragment of sterile kidney from normal rabbits or guinea-pigs were inoculated with a few drops to 2 c.c. of infectious typhus whole or citrated blood. Following the addition of 0.5 c.c. of 20 per cent. dextrose or 2 per cent. dextrose bouillon, the tubes were sealed with sterile petrolatum. Strict anaerobiosis or a graded oxygen tension was thereby created. The hydrogen ion concentration of the ascitic fluid was adjusted to from 7 to 7.4, when necessary, by titration with tenth-normal hydrochloric acid or normal sodium or potassium dihydrogen phosphate.

Subinoculations were made from various levels of the culture medium, most often from the dependent portion. In making transplants, 0.2 c.c. of culture material was transferred to tubes prepared as in initial cultures and previously incubated to insure sterility. All cultures were incubated at 37.5 C. or at from 22 to 26 C. (room temperature).

The use of larger tubes (1.75 by 28 cm.) or 50 c.c. Florence flasks has been of service when greater quantities of blood (3 c.c. or more) were cultivated. Correspondingly larger fragments of sterile kidney were employed. In several instances an attempt was made to overcome the phagocytic action of the leukocytes by the use of various leukocytoxic agents such as saponin, distilled water or *Streptococcus hemolyticus* leukocidin.

Brain Cultures.—Blocks of infectious guinea-pig brain, removed under the strictest aseptic precautions immediately after exsanguination, were added to tubes (1.5 by 20 cm.), with or without the previous addition of fresh normal kidney; each block comprised approximately one sixth of the brain. Ascitic fluid, 2 per cent. dextrose bouillon or 20 per cent. dextrose was then added and the column of mediums layered with petrolatum. Some of the tubes so prepared were reserved for subcultivating. After from six to eight days, the brain was crushed with a sterile pipet and the tube reincubated before the transplants were made. The remainder of the inoculated tubes were incubated for varying periods, and the tissue was then removed for microscopic examination.

Kidney Cultures.—Kidneys of guinea-pigs, removed by the lumbar route after exsanguination of the animals, were bisected and tubed. Except for the omission of fragments of normal kidneys, the tubes were then completed as with the brain cultures.

Control Cultures.—With the same technic, identical studies were carried out on the blood, brain and kidneys of normal control guinea-pigs and on the blood of individuals suffering from other febrile diseases. The bodies herein described were never encountered in any of the control tubes.

Gross Appearance of the Cultures.—A significant feature of the growth is the absence of any marked alteration in the culture medium. The dextrose is not fermented and the medium not acidified. Marked clouding, precipitation or gas formation is always due to a contaminating organism, either alone or in symbiosis with the bodies under consideration. In positive cultures on fluid mediums, there appears after five days a slight haziness throughout the major part of the tube, most marked in the dependent portion. A fine granular sediment is sometimes deposited. The faint diffuse haziness was found to be due to the fact that the organisms are held in suspension; there is no marked tendency for them to settle out, owing to their low specific gravity. For the same reason, prolonged high speed centrifugalization fails to throw them down entirely.

Much more clouding takes place in the brain cultures, owing to the disintegration of the tissue. In the kidney cultures, the tissue becomes blanched, coincidental with slight diffusion of hemoglobin into the medium. Aside from this, no changes are noted.

The organism has now been grown on artificial culture medium for seven successive generations without animal passage.

Morphology.—Dark field studies are unsatisfactory with this organism. Smears prepared from different levels of the culture, but mainly from the dependent portions, were air-dried and fixed with methyl or absolute alcohol. Suitable staining can be obtained only by prolonged contact with dilute untreated Giemsa solution. The bodies do not stain readily with Loeffler's methylene blue, polychrome methylene blue, dilute carbolfuchsin or rose bengal. They do not retain the stain with Gram's method.

With the Giemsa stain, the organisms appear mostly as minute, chromatophilic, ruby red, coccobacillary bodies, comparable in size to a small Pfeiffer bacillus. Even when the bodies are stained intensely, their outlines are rather blurred. In smears from fluid cultures, they are discrete, arranged singly and in diploid forms, with practically no tendency to clumping. Fluid cultures present mostly the short elliptic forms. In tissue cultures, the bodies may assume a bipolar appearance, owing to their diploid arrangement. While there is some variation in size among the various strains, there is no marked pleomorphism in a given culture; nor does the age of the culture have any marked influence, as a rule, on the morphology.

Larger coccoid ringlet forms, with paler hyaline centers, have sometimes been encountered. Occasionally, there has been observed a grouping of smaller bacillary forms in a spherical arrangement, apparently lying in a paler matrix—an appearance not unlike a sporulating body in a developmental cycle.

Filtrability.—None of the bodies in the culture will pass through a Berkefeld filter N or W, or the corresponding Mandler filter.

Pathogenicity.—The intraperitoneal inoculation into guinea-pigs of one or more cubic centimeters of culture material results, after an incubation period of six or more days, in a febrile reaction, which usually lasts from five to ten days. The length of the incubation period, as well as the temperature curve, resembles the disease produced in guinea-pigs by the intraperitoneal inoculation of infectious typhus blood. Guinea-pigs injected with the blood of these animals drawn at the onset of the febrile reaction also develop a similar disease. Such a culture virus has now been passed in guinea-pigs through six successive transmissions.

Persistence of Virulence in Cultures.—The fourth cultural generation was still pathogenic for animals up to twelve weeks after the original infectious blood had been obtained from the body. As has been repeatedly ascertained, typhus blood at incubator temperature ordinarily loses its virulence within six days. Cultures also grow and retain their virulence at room temperature.

Amount of Original Infectious Blood Present in Inoculated Culture Material.—It is estimated that when 1 c.c. of a fourth generation culture was injected into a guinea-pig, it contained about 0.00000016 c.c. of the original typhus blood—less than one millionth of a cubic centimeter. Numerous reliable investigators have repeatedly demonstrated that very much greater quantities of typhus blood are ordinarily necessary in order to infect the guinea-pig—often one or more cubic centimeters.

Action of Saponin on Cultures.—The presence of saponin in cultures completely inhibited growth and destroyed the virulence of the culture material.

Pathology of Animals Infected with Cultures. — Brain Lesions: Animals inoculated with culture material and killed during the febrile reaction, and animals dying of the

disease thus produced, showed no gross changes in the viscera, except some swelling of the spleen and enlargement of the malpighian bodies. On microscopic examination, focal lesions were found in the brain which were identical with those regularly present in the brains of typhus fever patients and of animals infected with the disease. Similar focal lesions were found in the brains of guinea-pigs in which the febrile disease had been produced by the intraperitoneal injection of blood or brain derived from culture virus animals—a guinea-pig series in which the original reaction was produced with culture material.

Presence of Similar Bodies in Tissues.—In some of the brain and of the kidney cultures, the tissues were not crushed, but were removed after varying periods of incubation (from three to ten days). These fragments of brain or kidney were then fixed in Zenker's fluid, sectioned in paraffin and stained with Giemsa stain. Microscopic examination of the tissues removed after five to seven days' incubation regularly revealed large numbers of these bodies intracellular in the walls of small blood vessels. There was also well marked parallelism between the numerical frequency of the bodies in the supernatant fluid of these cultures and their numbers in the brain or kidney tissue. In other words, after from five to seven days' incubation, the bodies were found with ease in the sections, and simultaneous with their numerical increase in the tissue, they appeared in large numbers in the supernatant fluid of the cultures. Thereafter, they continued to increase in numbers in both sites up to the tenth day of incubation.

Immunity.—In known typhus immune guinea-pigs, injection of these organisms failed to produce any rise in temperature. Cultures similarly and simultaneously injected into normal control guinea-pigs produced typical temperature curves after the characteristic period of incubation. The blood of animals during the febrile reaction caused by these bodies failed to produce any rise of temperature in known typhus immune guinea-pigs—although typical temperature curves were produced in normal control animals.

A study of the reverse condition—as to whether the febrile disease produced in guinea-pigs by the inoculation of culture material in turn confers an immunity to typhus fever virus—is in progress. Sufficient experiments on which to base a conclusion have been delayed by an intercurrent laboratory epidemic.

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RELATION OF THESE BODIES TO THE PLOTZ ORGANISM

The bodies cultivated by these methods differ in morphology from the bacillus of Plotz in that they are even more minute, of slightly hazy outline, and do not assume polymorphous involution forms. With Giemsa stain, the bodies always take a ruby red color, they are not stained by Gram's method, and are stainable with ordinary anilin dyes only with considerable difficulty. In very early blood cultures and under certain environmental conditions, the Plotz bacillus may also be decolorized by Gram's method, and it may then occasionally stain red with Giemsa stain; but even under these circumstances it is easily stained with the common anilin dyes.

Differences of more importance are the variations in cultural characteristics. It has thus far been impossible to grow the bodies on a solid medium, such as Veillon's ascitic fluid glucose agar, a medium on which the bacillus of Plotz grows readily. Attempts at conversion of one form into the other by cultural means have been unsuccessful. Furthermore, in a glucose ascitic fluid medium, no acid is formed, although the Plotz organism under similar conditions rapidly produces an intense acidification. Lastly, in contrast to the numerical infrequency with which the Plotz bacillus was encountered in Veillon blood cultures, it is significant that, with the technic described, the bodies could be consistently recovered from a few drops of blood.

We therefore conclude that the bodies which we have cultured are quite different from the Plotz organism; but what rôle the Plotz bacillus plays in the disease and what relationship, if any, it bears to these bodies is still to be ascertained and will be the subject of further investigation. This study seems especially desirable in view of the fact that Olitsky, Denzer and Husk cultivated the Plotz bacillus from typhus infected lice.

RELATIONSHIP TO RICKETTSIA

Concerning the question as to the identity of the bodies with Rickettsia prowazeki, no definite decision is as yet permissible. Morphologically and tinctorially, the two bodies are probably indistinguishable. The best evidence is the presence of these bodies intracellular in the walls of vessels in the brain and other tissues, sites in which Rickettsia are found, and their increase in numbers at these sites when the tissues are incubated in appropriate culture mediums.

NATURE OF THE BODIES

Whether the bodies are of bacterial or of protozoan nature we have not as yet been able to decide. They usually present a more or less coccobacillary appearance. Their resistance to staining with the ordinary anilin dyes would indicate, however, that we are dealing with an unusual type of organism. The red coloration with Giemsa stain is similarly suggestive, but probably less important. The action of saponin in inhibiting the growth of cultures and destroying their virulence would suggest the possibility of a protozoan nature. The evidence at our disposal is as yet insufficient for a definite opinion.

The detailed protocols of the work on which the above observations are based will be included in subsequent publications.

Clinical Notes, Suggestions, and New Instruments

A NEW SIGN FOR THE DIAGNOSIS OF PERICARDITIS WITH EFFUSION IN CHILDREN *

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The presence or the signs of a preexisting pericarditis is found in about 4 per cent. of children coming to necropsy. When it is remembered that many patients recover, leaving no trace of the disease, the frequency of this condition in childhood may be appreciated. Pericarditis with effusion is extremely difficult of diagnosis after the fluid has collected, the condition being usually mistaken for cardiac dilatation or hypertrophy.

The roentgen ray has been of material assistance in reducing the number of errors. It is only in very recent times, however, that a roentgenologist would make a diagnosis of pericardial effusion in the absence of an obliterated cardiohepatic angle, although it is now generally known that, roentgenologically, obliteration of this angle is uncommon.

The physical signs of pericarditis with effusion almost parallel the physical signs of cardiac dilatation, the obliteration of the cardiohepatic angle on percussion in the former being an important differential point.

There is usually small difficulty in cases observed from the outset in which typical pericardial friction sounds disappear under observation, with obscuration of heart sounds, the area of cardiac dulness increasing meanwhile from day to day. But when the effusion already exists, a correct diagnosis is most difficult. Any method of examination which can increase

* In the few cases among adults in which this sign was tried, it has been found present.

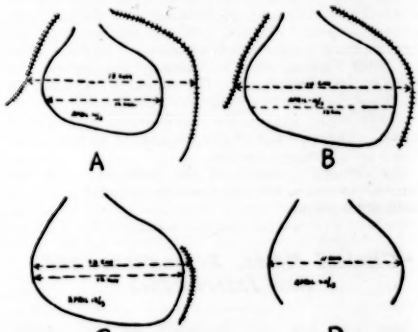
the frequency of a correct diagnosis is therefore much to be desired.

The sign here described was first observed by me more than ten years ago, and since then has repeatedly proved to be reliable. It consists of two lines of dulness to be found in the cardiac area; an outer line to the right and left of the cardiac area, obtained by the lightest possible direct percussion, as usually practiced, which for purposes of description will be referred to as the pericardiac lines, and an inner line roughly paralleling these but obtained by auscultatory percussion or stroking, which will be referred to as the cardiac line.

DESCRIPTION OF METHOD

1. The cardiac dulness is outlined in the usual manner, the lightest possible stroke being used, percussion being made from the periphery toward the heart. This line is marked out on the chest wall with pencil. Two lines are thus obtained, one at the left, the other at the right of the cardiac area (the pericardiac lines).

2. The bell of the stethoscope is then placed against the chest wall at approximately the center of this area, and light stroking or tapping with the tip of a finger or pencil from the periphery toward the stethoscope will reveal a second line within the first lines, roughly paralleling these, differing, however, in this, that they form a figure roughly heart shaped (the cardiac line).



A, April 14: cardiac and pericardiac lines at height of effusion as they appeared on the chest wall; *B*, April 17: no change in cardiac lines, whereas pericardial lines are contracted 4 cm.; *C*, April 18: no change in cardiac lines; pericardiac line found only at left border 1 cm. out; *D*, April 20: no double line.

Repetition of this procedure usually shows a change in the outer lines from day to day in the direction either of extension or of contraction, whereas the inner lines remain more or less constant. There are several disturbing factors, the most important being the persistance of a double line at the left border of the heart in some cases, or the existence of such a line when pericardial effusion can be excluded. The only explanation thus far offered is that the exterior line in this instance represents the lateral aspect of the heart, the interior line the anterior aspect. When a double line is found only at the left border, the sign is void and has no diagnostic value. Whether the interior, or cardiac, line represents the exact size of the heart or only that portion uncovered by the lungs is uncertain. It would seem, however, to represent that portion of the heart uncovered or only thinly covered by the effusion or lung. I am well aware that auscultatory percussion, as practiced and lauded by such advocates of the method as Bianchi, Bisch and Auprecht, is considered absolutely unreliable by many, notably Grote, who asserts that a double contour is readily obtainable in outlining the heart. When it is possible to obtain this double contour on the right as well as on the left borders, the diagnosis of pericarditis with effusion is justifiable. I have never seen a case susceptible of adequate proof in which such an effusion did not exist. It has never been present when pericarditis could be ruled out.

CRITERIA

The following criteria are offered in support of the value of this sign:

1. Fluoroscopic examination, which shows the cardiac shadow approximating the interior line.
2. The entire shadow approximating the pericardiac line.
3. Very little change in the interior, or cardiac, line as the patient improves, whereas the exterior, or pericardiac, line changes very rapidly until finally the exterior and interior lines coincide.
4. As the effusion subsides, greater distinctness of the cardiac sounds at the points where they might be expected to be heard if the cardiac line was a true one.
5. Withdrawal of effused fluid by aspiration.
6. In well marked cases, change in direction and relationship of the lines on change in posture.
7. Postmortem examination.
8. The usual classical symptoms of the disease.

USE OF THE SIGN

The accompanying semidiagrammatic illustrations demonstrate approximately the lines referred to at different stages of the disease. The measurements are those taken from a case.

Since use was made of this sign, pericarditis with effusion has become a very frequent condition in the pediatric service of Lebanon Hospital, and dependence is placed on it by those members of the staff familiar with it.

This study was carried out with but scant recourse to postmortem examination, since most cases terminated in recovery, and among those who died necropsy was permitted only in a few.

This method of examination has proved to be of the greatest value in the diagnosis of pericarditis with effusion, a condition often overlooked, and it is to be hoped that further study may be undertaken by others, with larger opportunities for postmortem examination, that its final status may be determined.

666 West End Avenue.

SUGGESTION FOR THE AVOIDANCE OF THE WASSERMANN-FAST STATE IN THE TREATMENT OF CHRONIC SYPHILIS

ARCHIBALD McNEIL, M.D., NEW YORK

Ever since a permanently negative Wassermann test has been considered a necessary requisite before a case of syphilis can be considered as cured, the status of the "Wassermann-fast" case has caused no little doubt and anxiety. The following statements, which refer to old cases of syphilis, deal with the early detection of the development of the Wassermann-fast state, its probable cause and significance, and the means of its prevention.

By using a modification of the usual technic of the routine Wassermann test, it is possible to measure in number of complement-binding units the power of any positive serum to bind complement and to demonstrate the effect any drug may have on this power. Briefly, the modification of technic consists in a very exact method of standardizing the complement and in the use of serial dilutions of the serum to be tested so that the result of each dilution differs from that of the preceding by just one plus. By this means it is possible to make a series of titrations of the same serum, using different hemolytic systems, with practically uniform results. The full description of the modification by which the number of complement-binding units in a serum may be determined has been published elsewhere[1]; the clinical details showing the value of the titrated Wassermann test in the treatment of chronic as well as acute cases of syphilis are reserved for future publication.

When the number of complement-binding units in the serum of a patient remains stationary under intensive treatment or

1. McNeil, Archibald: J. Lab. & Clin. Med., November, 1921, p. 109.

is increased, it would seem safe to conclude that the spirochetes have become immune to the drug or drugs that are being administered; the patient, in other words, is "Wassermann-fast" and will remain so until the treatment is changed to a more effective one. The serum of such a patient may have a complement-binding power equivalent to forty or more plus, which means that if the serum is diluted ten or more times with salt solution, the routine Wassermann test still gives a + + + + reaction. While the treatment continues effective, the serum of such a patient will give a more or less rapid decrease in the number of complement-binding units; but as soon as the spirochetes become immune to the treatment, the number of complement-binding units for a while may remain practically stationary, and if the treatment is continued, the number of units may increase to almost the same extent as if no treatment whatever was given. When the treatment is changed, however, the spirochetes may again be attacked, and the number of complement-binding units usually show a decrease after each treatment until the spirochetes, according to the theory, again become immune to the drug that is being given.

Up to the present time my experience indicates that when the complement-binding units of the serum show no further decrease after three successive treatments, the case is "Wassermann-fast" so far as that form of treatment is concerned. It seems, furthermore, that a prolonged treatment with any single drug or combination of drugs is likely to result eventually in the establishment of this resistant state, thus causing injury to the patient and a serious loss of time in effective treatment. As the number of therapeutic agents that affect the spirochetes are few, it would seem wiser to administer only one at a time so that when the spirochetes become immune to one it may be replaced by another drug to which they are not immune. This enables the physician to wage a constant warfare on spirochetes and adds greatly to the possibilities of curing the patient.

18 East Forty-First Street.

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New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION. W. A. PUCKNER, SECRETARY.

POTASSIUM MERCURIC IODIDE.—Potassii Hydrargyri Iodidum.—A complex salt, K_2HgI_4, former by the interaction of one molecule of mercuric iodide with two molecules of potassium iodide and containing about 25.5 per cent. of mercury.

Actions and Uses.—Potassium Mercuric Iodide is used for the same purposes as mercuric iodide, over which it has some advantages because of its solubility. As a germicide it is effective as it does not coagulate albumin; however, there seems to be no work to show how much the activity is decreased when an excess of potassium iodide is present. In comparison with mercuric chloride it is claimed to have a greater safety factor: Weight for weight, potassium mercuric iodide is about one half as toxic as mercuric chloride according to animal experiments; in proportion to the mercury content, however, potassium mercuric iodide and mercuric chloride possess about the same toxicity.

Externally, potassium mercuric iodide is used for skin disinfection, irrigations, disinfection of instruments, and of excreta and discharges.

Dosage.—As a germicide it is used in concentrations of 1:100 to 1:10,000. For irrigation of wounds, it is desirable to render the solution isotonic by addition of 0.9 per cent. sodium chloride. Solutions of potassium mercuric iodide may be prepared:

(1) By dissolivng 1 part by weight of mercuric iodide and 1 part by weight of potassium iodide in a small amount of water and then diluting to proper strength; such a solution will contain about 20 per cent. excess of potassium iodide, sufficient to prevent precipitation of mercuric iodide from dilute solutions of the complex salt. (1 Gm. mercuric iodide is equivalent to 1.7 Gm. potassium mercuric iodide.)

(2) By dissolving potassium mercuric iodide in water containing potassium iodide. Solutions made from potassium mercuric iodide alone have a tendency to decompose with precipitation of mercuric iodide; hence it is necessary to have present an excess of potassium iodide equivalent to about 20 per cent. by weight of the amount of potassium mercuric iodide used.

Potassium mercuric iodide occurs as yellow crystals, deliquescent in air. It is soluble in alcohol and in potassium iodide solution. It yields a clear solution with one part of water. When the soluton is diluted with much water, mercuric iodide precipitates slowly; but if one fifth of its weight of potassium iodide is previously added to the salt or its concentrated solution, no mercuric iodide separates on its dilution. Its aqueous solution is slightly alkaline to litmus. When the salt is heated in a test tube to the point of fusion, it becomes red, but on cooling again assumes a yellow color; at higher temperatures, there is volatilization of mercuric iodide.

Treat about 0.2 Gm. of potassium mercuric iodide with 1 Cc. of water, add 1 Cc. of chloroform and 0.5 Cc. of ferric chloride solution; the chloroform shows the characteristic color of iodine. Treat about 0.1 Gm. of the salt with 2 Cc. of sodium hydroxide solution, and add a few drops of formaldehyde solution; a black precipitate of metallic mercury is produced.

Potassium mercuric iodide loses not more than 4 per cent. of its weight when dried in a hot air oven at 120 C. for four hours.

Transfer about 1.5 Gm. of potassium mercuric iodide, accurately weighed, to a 100 Cc. volumetric flask, and dissolve in 1.5 Cc. of water, then dilute to 100 Cc. Pipette immediately 10 Cc. of the solution into a glass stoppered 250 Cc. bottle, add 35 Cc. of hydrochloric acid and 5 Cc. of chloroform. Titrate the solution with tenth normal potassium iodate (10.701 Gm. in 1,000 Cc.), stoppering the bottle and shaking the contents well after each addition. The reaction is carried on until the iodine which was first liberated disappears, and the chloroform shows no pink color. The iodine content, calculated to the dry salt, is not less than 63.4 per cent. nor more than 65.5 per cent.

Dissolve about 2.5 Gm. of potassium mercuric iodide, accurately weighed, in about 10 Cc. of water, and add sufficient potassium iodide solution to prevent precipitation of mercuric iodide. Introduce the solution and washings into a cathode cup, previously weighed with its metallic mercury, and add 10 Cc. of sodium hydroxide solution, 20 per cent. Pass through the solution an electric current, gradually increasing the current so that at the end of eight minutes it will be 2 to 3 amperes and 7 to 10 volts, stirring the solution by rotating the anode about 500 revolutions per minute. After forty minutes, wash with distilled water, with the aid of a siphon and without interrupting the current until the current drops to zero. Remove the cathode cup and allow it to stand with 20 Cc. of acetic acid solution, 3 per cent., until bubbles cease to be evolved. Wash the mercury with water, and then alcohol; remove most of the excess alcohol by filter paper, then dry in a desiccator over potassium hydroxide sticks and a beaker of mercury. The increase in the weight in the cathode cup represents the amount of mercury present in the quantity of the salt taken. The mercury content of potassium mercuric iodide, calculated to the dry salt, is not less than 25.0 per cent., nor more than 26.0 per cent.

Mercury and Potassium Iodide-P. W. R.—A brand of potassium mercuric iodide-N. N. R.

Manufactured by Powers-Weightman-Rosengarten Company, Philadelphia. No U. S. patent or trademark.

DIPHTHERIA ANTITOXIN-TOXIN MIXTURE (See New and Nonofficial Remedies, 1921, p. 282).

E. R. Squibb & Sons, New York.

Diphtheria Toxin-Antitoxin Mixture-Squibb.—Each cubic centimeter of the mixture represents 3 L+ doses of diphtheria toxin and three units of diphtheria antitoxin. The mixture is tested until 5 Cc., when injected into guinea-pigs weighing about 300 gm., will cause paralysis in from twelve to twenty days, whereas 1 Cc., when injected into several guinea-pigs, does not cause acute death. It is marketed in packages of three 1 Cc. ampules, representing one complete immunizing treatment; also in packages of thirty 1 Cc. ampules, representing ten complete treatments.

DIPHTHERIA IMMUNITY TEST (SCHICK TEST) (See New and Nonofficial Remedies, 1921, p. 323).

E. R. Squibb & Sons, New York.

Diphtheria Immunity Test (Schick Test)-Squibb.—Marketed in packages of one vial, containing diphtheria toxin sufficient for ten tests, accompanied by a vial of the required amount of sterile diluent; also in packages of one vial containing diphtheria toxin sufficient for 100 tests, accompanied by a vial of the required amount of sterile diluent.

CYPRESS OIL (See New and Nonofficial Remedies, 1921, p. 95).

Oil of Cypress-Schimmel and Co.—A brand of cypress oil-N. N. R.

Manufactured by Schimmel and Co., Miltitz, near Leipzig, Germany (Fritzsche Bros., New York, distributor). No U. S. patent or trademark.

BISMUTH TRIBROMPHENATE (See New and Nonofficial Remedies, 1921, p. 71).

Xeroform-S. and G.—A brand of bismuth tribromphenate-N. N. R.

Marketed by Schering and Glatz, Inc., New York. No U. S. patent or trademark.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, DECEMBER 17, 1921

A remittance slip for subscriptions and fellowship dues for 1922 is enclosed in this issue of THE JOURNAL. This plan, which has now been in effect for several years, means a large saving to the Association in postage and clerical work. Fellows and subscribers who desire to aid should fill out the slip promptly and return at once with check or money order. Similar slips will be found in the January issues of the special journals published by the Association.

SHALL THE CALORIES BE FORGOTTEN?

During the World War, at a time when the food supply of every nation presented many pressing problems closely involving the welfare of its people, and when it became quite customary to speak in terms of millions of calories of foodstuffs as well as millions of rounds of munitions, an American humorist said: "After all, we eat food and not calories!" This facetious remark was widely quoted and doubtless provoked a variety of trains of thought in the minds of the different persons who heard it. The world was undergoing a great experiment in nutrition on a scale never before witnessed. While thrones were tottering and kingdoms were being obliterated, millions of persons were being compelled to change their customary diets and to subsist on a greatly decreased food intake. The rations continued to be reduced from month to month until the allotted daily quota per person in Austria, for example, fell from 1,800 calories to 1,000 calories, and finally even to 800 food fuel units. At this time supplementary food was purchasable only with the greatest difficulty and at extreme prices if at all—and yet people continued to live. There were reports that some of the sick, notably diabetic patients and victims of certain gastro-intestinal disorders, were improving in health. Little wonder, then, that thoughtful persons should ask whether the nutrition standards of the physiologists since the days when Voit preached the doctrine of 3,000 calories a day for the average man were false. Had the civilized world been enjoying an orgy of food during the past generation? Had peace and prosperity induced a "luxus consumption" of nutriment? Was the headliner correct when he announced that "calories have killed more persons than has disease"?

The world-wide experiment has progressed to a stage at which it is already possible to evaluate some of the results and to determine whether the slogan of a return to the simple life should include an appeal for a reform of conventional standards of nutrition. A survey of the nutritional customs of the diverse nations of the earth leads to the conclusion that, despite the wide variations in climate and in economic and agricultural conditions under which they exist, they nevertheless manifest a surprising similarity in consumption of the fundamental nutrients. It is difficult to escape the conviction that mankind seeks food in appropriate amounts in response to a well-defined instinct which Rubner once designated as "Nahrungstrieb." Statistics demonstrate that, where some freedom of choice exists, the daily intake of the "average" man, whether he be a native of England, Japan, Russia, France, Germany, Italy or America, approximates 2,700 calories. Nutritional surveys have demonstrated that in times of plenty, at least, the data of food intake are almost identical in the case of inhabitants of Rome and Helsingfors, of Boston and Berlin.

Some one will naturally inquire: Does not enforced decrease in food consumption increase the availability of the less abundant ration? Numerous investigations in the Central Empires have shown that this is not the case. There is no evidence for an adjustment of the alimentary tract of man to secure a better utilization of war-time dietaries, many of which were uncomfortably abundant in cellulose and similar indigestible components. The war has not converted man into a successful herbivorous animal; on the contrary, according to many medical reports, the enforced intake of bulky plant products caused much gastro-intestinal distress. Nor did increased mastication enhance the availability of the nutrients. The laws of the conservation of matter and energy have remained unchanged. A noteworthy reduction in food intake has been followed by a compensatory loss of body tissues and by reduction in working efficiency. *Ex nihilo nihil fit!* Hence Professor Durig has recently reminded an audience of physicians in Vienna that the accepted standards of nutrition should not be abandoned; for every experience of the last few years points to their wisdom. The customary food habits of the world represent an optimum which we must not juggle. The experiences of the war, Durig said, have taught clearly that departure from these norms leads to undernutrition and its consequences, from which neither enhanced digestion nor mastication nor any panacea can furnish protection. The same story is echoed throughout Europe.

In these comments there is a lesson which looks to the future. The nutritive needs—the caloric require-

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ments—of children have not usually been appropriately recognized in the past. It is now beyond dispute that during adolescence the needs of children of both sexes may exceed by nearly 1,000 calories a day for each person the requirements of the adult man or woman of moderate activity.[1] At the age of 1 year the average caloric requirement approximates 100 calories per kilogram (2⅕ pounds), falling to about 80 calories at the age of 6 and continuing at this value until the tenth year. There it remains until growth is complete, when the adult standard of about 44 calories per kilogram suffices. Holt and Fales[2] have also found that the average amount of protein taken in the usual mixed diet by more than 100 healthy children ranged from 44 gm. (1½ ounces) daily in the second year to 130 gm. (4½ ounces) daily in the fifteenth year. The latter figure exceeds the average adult need, and obviously should do so, since adults require protein for maintenance only. The amount of protein per kilogram of body weight taken by these children averaged about 4 gm. (61¾ grains) at 1 year, diminished to about 2.6 gm. (40 grains) at 6 years, and remained at about this value until the end of growth. So long as we preach the doctrine of *mens sana in corpore sano*, we must not skimp the food allowance of the coming generation. History now in the making is teaching what underfeeding may result in.

FACTORS IN WOUND HEALING

The healing of wounds after injury involves the regeneration of certain tissues. In this process there is a resumption of the proliferation of cells. It requires little argument to indicate the importance of knowing what factors are concerned in the regeneration processes, for they involve the facility with which repair may go on in the organism and the speed with which the healing can be accomplished. Any study of the cicatrization of wounds is, therefore, something more than the consideration of a mere academic question. Carrel[3] has pointed out that the resumption of cell proliferation in wounded tissues may be attributed, as Welch[4] suggested long ago, to the removal of resistance to growth, in consequence of the defect resulting from loss of tissues. In other words, he writes, "the removal of the products of growth, that is, of a portion of the tissues, immediately reinaugurates the growth process, just as the removal of the products of a balanced chemical reaction at equilibrium immediately reinitiates the forward reaction." This means that regeneration, being a direct consequence of the injury, is started by forces within the organism.

1. Holt, L. E., and Fales, Helen L.: The Food Requirements of Children, I, The Total Caloric Requirements, Am. J. Dis. Child. **21**: 1 (Jan.) 1921.
2. Holt, L. K., and Fales, Helen L.: The Food Requirements of Children, II, The Protein Requirement, Am. J. Dis. Child. **22**: 371 (Oct.) 1921.
3. Carrel, Alexis: Cicatrization of Wounds, XII, Factors Initiating Regeneration, J. Exper. Med. **34**: 425 (Nov.) 1921.
4. Welch, W. H.: Science **5**: 813, 1897.

This is not the only hypothesis, however, which will account for wound repair. It is equally conceivable and logical that external factors may promote or initiate the cicatrization phenomena. On this view the cells would be directly stimulated to growth and multiplication by forces outside the organism, acting on tissues deprived by injury of their natural protection. In experimental investigation of the problem at the Rockefeller Institute for Medical Research, Carrel has tested the first hypothesis by watching the progress of repair in wounds protected against all external irritation. He found that as long as the wounds were protected by a connective tissue dressing against mechanical, chemical and bacterial irritations, no evidence of cicatrization was found. Admitting uncertainty whether cicatrization could be prevented for an indefinite period, Carrel believes there is no doubt that the mechanism of regeneration is not set in motion at the usual time, when all external irritations are suppressed. It appears, he adds, that, under ordinary conditions, cicatrization is not initiated by an internal factor.

On the other hand, the local application of certain irritants, such as turpentine, or the presence of bacteria tends to reduce the initial delay in wound repair—the latent period of regeneration. We are reminded that a small wound will begin to cicatrize sooner if slightly infected, as practically always happens, than if it were thoroughly protected by a nonirritating dressing. Perhaps Carrel is correct in believing that the mechanism of regeneration has become adapted to the ordinary conditions of life where infection or irritation of wounds is likely to occur. In any event, he is presumably justified in the conclusion that regeneration apparently is initiated, not by internal, but by external factors.

THE EFFECTS OF UNDERNOURISHMENT

Graham Lusk[1] has recently painted a vivid picture of the effects of undernourishment on the people of the central powers during the period of blockade. As he says, most of the food difficulties occurred in middle class families, among such persons as teachers, business people and pensioners, who could not demand and receive the enormous pay of common laborers. It is to be recognized, however, that the laborers need more food than those of sedentary occupation, and the first result of insufficient diet, according to Rubner, is a decrease in the efficiency of labor. Nevertheless, the people of less vigorous occupation show also marked effects, and the usual muscular activity necessary to maintain health is avoided because of a sensation of fatigue. Those who have been in undernourished communities recognize the situation especially by the fact that the children do not care to play, but are as inac-

1. Lusk, Graham: The Physiological Effects of Undernutrition, Phys. Rev. **1**: 523, 1921.

tive as elderly rheumatics; the chief reward of the relief workers is the sight of the children resuming their play after a few days of adequate diet. Even mental activity shows a corresponding depression. Lusk says: "The love of accomplishment, the power of performance, the note of personal initiative are absent, which impulses under ordinary conditions increase the assimilation of food and favor muscular energy. As the mind becomes depressed, muscular movements become slow and listless. It is related that a distinguished mathematician of Leipzig, in order to conserve his food requirement, remained in bed most of the day, doing his intellectual work while in bed." Zuntz and Loewy, who for years have been among the leading German students of nutrition, had the opportunity to follow their own metabolism from its prewar figures through the steps of emaciation until they had lost, respectively, 13 and 22 per cent. of their weight.

The recent hectic period of study of nutrition, with particular reference to the vitamins, has not limited itself to consideration of human beings, or even of animal organisms, but even unicellular forms have had their nourishment needs carefully considered. It has been found that yeasts and bacteria need their vitamins as much as any one else; and although they may be able to get along with simple food supplies of limited variety, yet there are certain conditions that must be met, or a famine district arises in the bacterial community. It is interesting to learn that bacteria subjected to protracted undernourishment behave in quite the same way as German professors or Russian children. Braun [2] has studied this subject at length, and tells us that proteus bacilli grown on a medium defective in nutrition also show a disinclination to wander over the surface of the medium, or to swim about in the hanging drop, and shortly they are seen to have lost their organs of locomotion, the flagella, as being the least vital part of their structure. As new generations of bacilli grow under famine conditions they are seen to be smaller and smaller, stunted forms more like cocci than like the well formed proteus bacillus. With the reduction in the size of each organism the ratio of surface to mass becomes increased, and so each individual becomes more capable of securing under competition adequate food from the impoverished rations. This recalls the statement of Gibbon and Ferguson that the children of Vienna between 2 and 3 years of age were 26.5 per cent. under normal average weight and 13.6 per cent. under the normal average height. Braun found that his emaciated bacilli, if grown for thirty generations on a starvation ration and then transferred to an adequate diet, continued for some time to produce stunted forms without flagella, only gradually returning to the normal proteus structure. It is fortunate that the war famine did not last for thirty generations. Even the Thirty Years' War did not produce a race of dwarfs, and we may hope that the effects of the three years of short rations in Europe will not produce permanent changes in the stature of the population.

2. Braun, H.: Ueber die Wirkung der Unternährung auf Bakterien, Ztschr. f. allg. Phys. **19**: 1, 1921.

Current Comment

QUESTIONNAIRE ON ALCOHOL AS A THERAPEUTIC AGENT

Up to the time of going to press more than 30,000 of the 54,200 questionnaires on the use of alcohol have been returned. The returns now cover all the states, in many of which there have been 60 to 70 per cent. of response. As may be conceived, checking and analyzing these replies involve a large amount of work by a considerable number of people. The interest of the medical profession aroused by the questionnaire is perhaps greater than that excited by any question on which the medical profession has been asked to act in recent years. Numerous lay periodicals have commented on the matter and await announcement of the result. The feeling of many physicians on this question is evidenced by their extensive comments on the questionnaire; this has to some extent complicated and delayed the tabulation. The material is of great economic importance not only to the medical profession but to the country at large.

STAMPING OUT TRACHOMA IN SOUTHERN ILLINOIS

The present tendency in the public health field is to utilize and coordinate existing agencies rather than create new and independent ones. A practical demonstration of this method has recently been made through the efforts of the Illinois Society for the Prevention of Blindness. It has been known for at least two generations that there is an unusual amount of trachoma in southern Illinois. The wide distribution of the disease has heretofore discouraged any organized efforts to control it. A definite program participated in by a number of state wide organizations, such as the state departments of public welfare and public health, the medical department of the state university, and the Red Cross, provided the necessary personnel for intensive work in five counties. In each county, the plans were first presented to the local organizations, including the county medical society, the city, township, and county church and school authorities, the business men and women's clubs, Rotary clubs, local branches of the Y. M. C. A. and Salvation Army, and the local Red Cross chapters. Twenty thousand schoolchildren in fifty schools in twenty-five towns were examined. Two per cent., or approximately 400, were found to have trachoma. These children were referred to their local physicians for treatment. In case the county medical society so desired, clinics, either diagnostic or remedial, were established. Medical and operative care and follow-up work were arranged for in a large number of cases, before blindness had resulted. The report, recently issued, shows that trachoma is as widespread in the country districts as in the towns, that it is as prevalent

among the natives as among immigrants, and that it existed before the influx of foreign born people to the Illinois coal fields began. The cost of this disease to the public has been enormous. In one county, one eleventh of the entire tax income of the county was expended in pensions to the blind, and 60 per cent. of such blindness was due to trachoma. The report is a demonstration of what can be done by coordinating existing agencies for the practical control of preventable diseases.

RÁZÍ (RHAZES), THE GREAT PERSIAN PHYSICIAN

In his Fitzpatrick Lectures at the College of Physicians in London, Edward G. Browne,[1] professor of Arabic in the University of Cambridge, presents interestingly what is known about Rázi, better known to us as Rhazes, the name given him by medieval Latinists. He was the greatest and most original of the moslem physicians and, although the chronology of his life is uncertain, his death being placed by some in the beginning of the tenth century, while others associate him with a ruler who reigned from A. D. 949 to 982, the number of seemingly trustworthy details about him that have come down to us is remarkable. He was born at Ray, one of the most ancient Persian cities, and in his early life he was interested first in music and later in philosophy before he took up medicine. He was chief physician to the hospital at Ray, and attended regularly with his pupils and their pupils, the latter acting as clinical clerks. Later he became physician-in-chief to the hospital in Bagdad, in regard to the foundation of which he was consulted. Asked to select the most suitable site, he caused pieces of meat to be hung up in different parts of the city, and chose for the site that part where signs of decomposition of the meat developed most slowly. All accounts appear to agree that toward the end of his life he became blind from cataract and refused operation because he did not wish to see any more of a world of which he was tired. One story gives the cause of the cataract as a blow on the head by a wealthy patron who became enraged at Rázi's refusal to make gold for him; but the cause is ascribed also to eating too many beans, of which he was very fond. No less than 113 major and twenty-eight minor medical writings are credited to Rázi, most of them now lost. His best known work is the monograph on smallpox and measles, first translated from Arabic into Latin in 1565 and into English (Sydenham Society) in 1848. This pioneer contribution to our knowledge of infectious diseases will ever be an ornament to Arabian medical literature, and "shows us Rhazes as a conscientious practitioner, almost free from dogmatic prejudices, following in the footsteps of Hippocrates." Another monograph on stone in the bladder and kidney has been published in the original with a French translation, and German translations have been made of other tracts by Rázi, notably his entertaining discussion of the success of charlatans and quacks in securing a degree of popularity often denied properly qualified physicians. Of Rázi's general works on medicine, Brown emphasizes especially the Hawi, which was compiled after his death by his pupils from unfinished notes and papers. These works, in which his power as a clinical observer stands forth, constitute "the most repaying field to which the Arabic scholar interested in medicine can devote himself." In certain Arabic collections of anecdotes occur accounts of some of Rázi's celebrated and sensational cases, in some of which his skill as a psychotherapist is illustrated. Ibn Abi Usaybiá in his "Classes of Physicians," compiled in 1245 and published in Cairo in 1882, says of Rázi:

> There are many accounts and various valuable observations by ar-Rázi as to what he achieved by his skill in the art of medicine, his unique attainments in the healing of the sick, his deduction of their condition through his skill in prognosis, and the information which he gave as to their symptoms and treatment, unto the like of which but few physicians have attained. He has many narratives of what fell within his experience in these and like matters, which are contained in many of his works.

1. Browne, E. G.: Arabian Medicine, 1921.

BACTERIOLOGY OF THE ADENOIDS

Since adenoids and tonsils are now being removed surgically in numerous cases, the full significance—the assumed possibilities and the actual consequences—of such a procedure must be seriously considered. Most of the evidence now offered in justification of the procedure is statistical in character; yet every thoughtful investigator must realize how many variables enter into the judgments thus formed and on what uncertain basis the deductions may often rest. Heretofore the tonsils and the pharynx in general have received most of the consideration devoted to the bacteriology of the upper respiratory passages. Recently, however, a group of investigators at the University of Illinois College of Medicine devoted their attention to the adenoids.[1] Cultures were taken from the excised adenoids to determine more definitely the flora of the nasopharynx. Pathogenic bacteria were found in every specimen. Of the more important organisms, hemolytic streptococci occurred in 61 per cent., pneumococci in 65 per cent., *B. influenzae* in 40.9 per cent., and *B. diphtheriae* in 12 per cent. Other streptococci, diphtheroids, staphylococci, gram-negative cocci, *B. mucosus-capsulatus* and *B. fusiformis* were encountered. The depths between the folds and bottoms of the cryptlike structures of the adenoids harbored hemolytic streptococci, pneumococci and *B. influenzae* in larger numbers than the epithelial surface or the nasopharyngeal swabs. The adenoids, then, like the tonsils, are to be regarded as common foci harboring dangerous micro-organisms. Although removal of the tonsils and adenoids evidently reduces the number of bacteria in the nasopharynx, according to the data of the Chicago bacteriologists it does not cause their disappearance. Examination of normal children revealed the same groups of micro-organisms in a considerable percentage; from which it may be concluded that they are a part of the usual flora of the nasopharynx—sources from which secondary infection may arise in the course of primary acute respiratory diseases and of chronic debilitating conditions.

1. Pilot, Isadore: The Bacteriology of the Adenoids, Proc. Inst. Med. Chicago **3**: 195, 1921. Pilot, Isadore, and Pearlman, S. J.: Bacteriologic Studies of the Upper Respiratory Passages, I, Hemolytic Streptococci of the Adenoids, J. Infect. Dis. **29**: 47 (July) 1921; II, The Pneumococci and Non-Hemolytic Streptococci of the Adenoids and Tonsils, ibid., p. 51; III, The Influenza Bacilli (Pfeiffer) of the Adenoids and Tonsils, ibid., p. 55. Meyer, J.; Pilot, Isadore, and Pearlman, S. J.: IV, The Incidence of Pneumococci, Hemolytic Streptococci and Influenza Bacilli (Pfeiffer) in the Nasopharynx of Tonsillectomized and Non-Tonsillectomized Children, ibid., p. 59. Pilot, Isadore: V, The Diphtheria Bacilli and Diphtheroids of the Adenoids and Tonsils, ibid., p. 62.

Association News

CONFERENCE OF CONSTITUENT STATE MEDICAL ASSOCIATIONS

(Continued from page 1899)

Third Meeting—Saturday Morning, November 12

The Maine Medical Association's Plan for Coordinating Health Activities in the State Association

DR. B. L. BRYANT, Bangor, Maine: In Maine we have a well organized state board of health, which has for its work an appropriation of about $100,000 annually. There is a full-time secretary with a salary of $4,500 a year. Next to that we have what we call the Public Health Association, which comprises all people in the state of Maine. It has at the head of it a secretary with a salary of $6,000 a year. We have in the state practically a thousand men who are eligible for membership in the state association. We have in the state association about 800 men who pay into the association approximately $3,000 a year. The salary of the secretary is $100.

In the matter of legislation we are almost negligible. If we go before the legislature we are considered as looking for something for the medical profession rather than in the interest of the people.

The first thing to take up is the matter of coordination and of getting together the state association so that it will amount to something and be of some use to the state. This year we decided that we must get closer to the people of the state of Maine and be more closely identified with public health work in public health interests. We decided to carry out two forms of activity, one to increase the membership and to make the association really worth while and give a man dollar for dollar for what he puts in, and second, take up the health problems of the state. To bring the men together we took up medical defense, and this year we have taken up the matter of liability insurance. We have a good medical defense committee. We succeeded in making satisfactory arrangements so that an insurance company agreed to place 500 or more policies at a very attractive rate. In accordance with this plan, the state association is in a position to offer to each member an opportunity to save about $16 a year on his liability insurance. This makes it worth while for men to come in on a financial basis. In addition, to help the state association, no man can get that liability insurance unless he is a member of the Maine Medical Association. If he does not pay dues, he loses liability insurance as well as membership in the association. We hope in this way to be able to bring into the association all the other eligible physicians we have in the state.

The next proposition is how to reach the people to get the state association in control, in an advisory capacity, on our health boards. As we looked over the matter we found that all health laws were put upon the statute books of the state by two of our own association members. We found them at the head of these organizations, and the idea occurred to us, Why not have a committee on public relations and put on it men active in the association? So, acting on that basis, we appointed a committee on public relations. We separated the legislative committee and made it into two committees, one on public relations and the ordinary legislative committee. On the first committee we placed the health commissioner, who is a member of the state association, the councilors who wrote the statutes of the state board of health, the president of the public health association, the editor of the journal, and the secretary of the Maine Medical Association. The teaching of medical subjects was submitted to the advisory board for advice and counsel. As a result, the program which we are putting out for the public health association includes a number of public health clinics which are to be presided over and run by the state association. A number of clinics will be given each year in the various hospitals of the state. We have held one, which was a great success, and we have a number of men from out of town.

This year, on the cancer committee we made two committees one, run by the Maine Medical Association, so that we get the name of our association circulated freely all over the state. In this way we shall get in touch with and have supervision of the medical activities of the cancer association.

In the matter of so-called community centers, we contemplate having a hospital in each community. In the eastern part of the state we have a Class A hospital. We have a large laboratory which is presided over by a medical director. We have a first class training school for nurses, and our idea is that as we are able to cooperate and coordinate all the small hospitals in the eastern part of the state we shall have control of hospital needs. We are now training technicians for these smaller hospitals.

DISCUSSION

DR. HOLMAN TAYLOR, Fort Worth, Texas (Chairman): Dr. Bryant's remarks will be discussed along with the other subjects on the program for this morning: a symposium on constituent state medical association activities. 1. The feasibility of full-time state secretaries: (*a*) reciprocal financial relationship between the American Medical Association and the state organizations; (*b*) the possibility of grouping states into districts to secure effective cooperation in legislative work, etc. 2. Field work in cooperation with the American Medical Association: (*a*) the councilor's place in the organization; (*b*) study courses in district and county societies.

In presenting this subject permit me to say that in my state the most telling work we have done has been in the solution of our financial problems. I do not know how many state associations have satisfactory arrangements for controlling their finances. We solved our financial problems early when we added Chapter VI to our by-laws, entitled "Board of Trustees." We had a hard time in adding that chapter because there were certain of those in the association who believed in a bolshevistic rather than democratic rule. However, we had the pleasure of seeing this opposition dwindle each year, so that we have been able to carry on our work more satisfactorily.

DR. OLIN WEST, Nashville, Tenn.: There has to be a public health organization, and it must be a state organization. It is just as essential that the department of health in any state shall have state authority behind it as it is that the supreme court or any other court shall have authority. There is no reason, however, why the public health department should not have the guidance and the leadership of the medical profession in that state except one, and that is the medical profession refuses to accept that leadership and neglects its obligations with respect to it. We must look the facts squarely in the face and take an inventory of ourselves and get back where we belong and meet naturally and rightfully the obligations we assumed when we became physicians. There has not been any information we have needed about medical organization that we did not get or could not get freely from the American Medical Association from its early organization down to the present time. The American Medical Association can serve the state associations just as it is serving them by compiling all possible information in the interest of the medical profession.

The operation and cooperation of the medical advertising bureau is one of the most splendid helps to state jorunals we have. If it were not for that bureau we would have to give up our state journal.

DR. ARTHUR T. MCCORMACK, Louisville, Ky.: The discussion opened by Dr. Bryant is pregnant with possibilities. On it depends to a tremendous degree the proper solution of the future of American medicine. The trouble in the past has been that we have failed to realize our opportunities, and to accept our responsibilities. Our task is to get each one of the doctors activated, and just as soon as he becomes active in society work, we will have made progress and achieved success.

DR. GEORGE E. DE SCHWEINITZ, Philadelphia: I cannot tell you how inspiring this conference has been to me. If I live long enough to take my duties as President of the American Medical Association, I shall try not to disappoint my friends and colleagues who are present on this occasion. I ask you not to say, so far as my duties are concerned, "Let George

do it," but say rather, "Let George do his duty, but we will back him in his effort whenever we feel it is necessary." (Applause.)

DR. CHARLES W. RICHARDSON, Washington, D. C.: As a specialist, I have long since recognized the importance in undergraduate work of teaching men only that which will be serviceable to them as general practitioners. When my classes are organized, at my first lecture, I distinctly inform them that I am not teaching for the purpose of making specialists but for the purpose of making useful those things in special lines that every practitioner ought to know. I tell them that if they want to go into specialism, it is their place to find out after their graduation what particular specialty they feel inclined to follow. I tell them that the poorest specialist I know is the hand picked specialist who becomes a specialist in his undergraduate work. He has the narrowest mind that medicine can produce, and I do not intend to develop that sort of men in my work. The clinical work is entirely in confirmation of that idea. I tell them that the best all around man in medicine is a man of the Osler type.

DR. D. E. SULLIVAN, Concord, N. H.: I should like to submit one thing as a matter of record. In our state association, our committee on hospitals reported in a resolution that no hospital should be recognized unless it has a certain number of beds, and that no nurse should be recognized as a registered nurse unless she has been trained in a hospital possessing a definite number of beds. That resolution was tabled. This subject has assumed such importance that recently through the public press Dr. Mayo called attention to it, and it seems to me that it is an apt subject for this conference to consider.

DR. ARTHUR T. MCCORMACK, Louisville, Ky.: I move that the attention of the editor of THE JOURNAL and the resident trustee be directed to the remarks of Dr. Richardson, and that a request be made for a series of editorials presenting these ideals to the teaching members of the profession and to the specialists.

Seconded and carried.

DR. GEORGE H. SIMMONS, Chicago, General Manager of the Association, was called on to make a few remarks. He said: Fellow workers in organization: This gathering of the executive officers of state associations is one of the greatest movements ever started for doing what we all feel we ought to do—to cooperate with you and to have you cooperate with us. This meeting has been exceptionally satisfactory to me because we have had constructive rather than destructive criticisms. Destructive criticisms are easily made, while constructive crticisms are sometimes difficult to make, but they always tend to build up. I am sure your visit here has helped us in the central office materially. Your discussions have stimulated the Board of Trustees to realize more than ever their responsibility. I am sure also that each one of you will go back home filled with enthusiasm and increased interest in your work and will be willing to make even greater sacrifices than you have already done.

The following preamble and resolutions, drafted by Dr. Holman Taylor, Texas, by unanimous vote were directed to be entered on the minutes of the conference:

WHEREAS, The now concluding Conference of Secretaries of Constituent State Medical Associations, held at the instance of the Board of Trustees of the American Medical Association and at the expense of the American Medical Association, has proved highly beneficial and most interesting, the free and frank discussion of the problems confronting the American Medical and constituent associations having been illuminating to all parties, and for that reason tending to coordination, therefore be it

Resolved, That the Conference extend to the Board of Trustees and the responsible officials of the American Medical Association the fullest measure of appreciation of the opportunities offered by the Conference, of which it is felt that full advantage has been taken; and be it further

Resolved, That the members of the Conference, individually and collectively, pledge to the Trustees of the American Medical Association and the executive officers thereof the fullest measure of cooperation in furthering the plans announced tentatively to the Conference, and relating to the welfare of the medical profession as a whole and the public it serves, and be it still further

Resolved, That the leadership of the Trustees, and the executive officers of the Association, is approved and appreciated.

Treatment of Late Syphilis.—The aim of treatment in late syphilis is to carry the infected individual through the fulness of his years, with maximum attainable efficiency and minimum danger to his contacts and to the social order.—J. H. Stokes, *Arch. Dermat. & Syph.* **4**:779 (Dec.) 1921.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALABAMA

Hospital News.—Fire destroyed the hospital at Greenville about midnight, December 1. It is reported that one patient is dead and two are missing.

Formation of Negro Tuberculosis Branch.—In cooperation with the Alabama Tuberculosis Association there has been formed the Negro Tuberculosis Association of Alabama, with Dr. Pierce L. Moton, president of the Tuskegee Institute, as its first director, to take care of negro tuberculosis victims in Alabama. The headquarters will be in Tuskegee, and the work will be supplemental to the field work already being done under the auspices of the Tuskegee Institute. The tuberculosis work will be financed by the Christmas seals to be sold only to negroes.

CALIFORNIA

Campaign Against Tuberculosis at Tonopah Mines.—A campaign against tuberculosis among miners at Tonopah has been launched by the leading mining companies operating in the vicinity.

Physicians Convicted.—The state board of pharmacy reports the following physicians prosecuted during the last fiscal year: Dr. David Bell, Los Angeles, arrested for prescribing, not in good faith, and fined $100; Dr. Lawrence T. Keegan, San Diego, fined $20 for maintaining a pharmacy without being licensed; Dr. Lawrence S. Bartlett, San Francisco, arrested for prescribing heroin for an addict and not reporting same, sentenced to six months in jail, which sentence was suspended for one year; Dr. Charles E. Brown, Fresno, fined $100 for furnishing morphin without a prescription; Dr. Charles S. Meredith, San Gabriel, fined $100 or sentenced to 100 days in jail for prescribing morphin not in good faith, sentence suspended.

Hospital News.—A new sixteen room pavilion consisting of open air sleeping porches and dressing rooms will be constructed at once at the California Sanatorium at Belmont. The estimated cost is $10,437. The contracts have been placed.——Ground has been broken for the new unit of the Seaside Hospital. The addition will be ready for use in five months, and will accommodate between fifty and sixty patients, giving the hospital a capacity of 165.——The contracts have been placed for the immediate construction of an addition to be known as the physiotherapy department of the Woodland Sanatorium.——After more than a year of work devoted to the preparation of detailed plans and the raising of funds, contracts for the addition to the Pasadena Hospital have been awarded.——Casa Del Mar, in southern California, has been purchased for $100,000, and will be converted into a hospital. With new buildings and bungalows to cost an additional $50,000, the hospital will accommodate 100 patients.

ILLINOIS

Hospital News.—Dr. George A. Zeller, Alton, who was head of the institution for fifteen years, after an absence of eight years, has been made managing officer of the Peoria State Hospital. Dr. Ralph A. Goodner retired from the management, November 15.

Physician Fined for Liquor Prescriptions.—It is reported that Dr. Roscoe C. McCormick, Wauconda, pleaded guilty in the Lake County court to the charge of illegally prescribing intoxicating liquors without first having made a medical examination of the patient, and was fined $100 and costs.

Chicago

Institute of Medicine Elects.—At the annual meeting of the Institute of Medicine the following officers were elected: president, Frank Billings; vice president, Thomas J. Watkins. The following officers were reelected: chairman of the board of governors, Ludvig Hektoen; secretary, Ernest E. Irons; treasurer, Joseph A. Capps.

Personal.—Dr. Benjamin Barker Beeson, Chicago, has been elected a corresponding member of the French Dermatological Society.——Dr. Emanuel Friend was struck by an auto-

mobile at Sixty-Third Street and the Illinois Central track, December 3. The injuries include a broken collar bone, fractured ribs and lacerated scalp.

INDIANA

Hospital News.—The Allen County commissioners have decided to issue bonds in the sum of $140,000 to be used in constructing buildings and making improvements at the Irene Byron Tuberculosis Hospital, Fort Wayne.

Personal.—Dr. Charles Wardell Stiles, Washington, D. C., gave three lectures before the class in hygiene and public health in the medical department of Indiana University, Indianapolis, last week. A dinner was given for Dr. Stiles by the local medical society. Dr. Richard A. Poole, ex-coroner of Marion County, has been appointed superintendent of the City Hospital, Indianapolis.

IOWA

Physician Granted Stay of Sixty Days.—Dr. Walter A. Matthey, Davenport, who was fined $1,000 and sentenced to serve a term of one year and a day in the federal prison at Fort Leavenworth, to begin December 3, has been granted a stay of sixty days in the execution of the order by the U. S. Circuit Court of Appeals. This delay has been granted in order that the case may be appealed to the U. S. Supreme Court.

KANSAS

Hospital News.—St. Barnabas Hospital, Salina, will be closed, following the resignation of the Sisters of Consolation from the management of the institution.

Physician Convicted.—It is reported that Dr. William A. Nixon, charged with first degree murder in connection with the killing of Arthur Banta, Great Bend, has been convicted.

MASSACHUSETTS

Cutter Lectures on Preventive Medicine.—Dr. Clemens Pirquet, professor of pediatrics, University of Vienna, will deliver two Cutter lectures on preventive medicine at the Medical School of Harvard University, Boston, December 21 and 22.

Personal.—Dr. Richard C. Cabot, professor of medicine, Harvard Medical School, Boston, delivered the sixth of a series of lectures being given under the auspices of the Lowell Institute, November 28. His subject was "Self-Deception and Self-Knowledge; Roots of Veracity."

State Association of Assistant Physicians.—The fifty-second annual meeting of the Massachusetts Association of Assistant Physicians of the State Department of Mental Diseases was held under the presidency of Dr. Ralph M. Chambers, Westboro, at the Worcester State Hospital, Worcester, December 7.

Court Ruling on Physicians.—"Mere intellectual power and scientific achievement without uprightness of character may be more harmful than ignorance" was the statement of the supreme court in overruling exceptions of Dr. Arthur A. Lawrence, Boston, who has been requested to appear before the board of registration in medicine and show cause why his certificate should not be revoked for alleged "gross misconduct in the practice of his profession." The court has dismissed his petition to have the board prohibited from requiring his presence. Dr. Lawrence claimed that as he had been a physician many years before the board came into existence, he had acquired vested rights which could not be taken from him unless he were found guilty by a jury of having committed a crime. The court held that the circumstance that the petitioner already had been registered and given a certificate to practice medicine gave him no immunity against future legislation.

MICHIGAN

Institution for Subnormal Persons.—An institution which is designed to house, employ and manage subnormal persons who are too irresponsible to care for themselves and not mentally deficient enough to send to the asylum, is planned for Detroit. It is to be called the Industrial Adjustment Center, and will be in charge of Dr. David R. Clark, psychiatrist for the receiving hospital.

MINNESOTA

County Medical Society Meeting.—At the recent annual meeting of the Clay-Becker County Medical Society, held at Moorhead, the society went on record against recommending wine or beer as medicine. The following officers were elected for the ensuing year: president, Dr. Charles H. Patterson, Barnesville; vice president, Dr. Gilbert L. Gosslee, Moorhead, and secretary-treasurer, Dr. Hallward J. Thornby, Moorhead.

Personal.—Dr. H. C. Jacobæus, Stockholm, Sweden; Dr. G. Gastañeta, Lima, Peru; Dr. S. Meri, Dairen, South Manchuria, and Dr. F. A. Nyulary, Melbourne, Australia, visited the Mayo Foundation and Mayo Clinic, November 14, 15 and 16. Dr. Jacobæus, professor of internal medicine at the Medico-Chirurgical Institute of Stockholm, gave a Mayo Foundation lecture on the use of the thoracoscope, November 14.——Dr. Charles J. Rowan, professor of surgery at the University of Iowa, gave a Mayo Foundation lecture, "Causes of Failure of Operations for Chronic Appendicitis," December 6, in the Assembly Room.

NEBRASKA

Conviction of Physician.—It is reported that Dr. Leslie S Fields, Omaha, has been convicted for performing an illegal operation on Ruth Ayer, Hayes Center, which resulted in her death.

NEW YORK

Personal.—Dr. Earl W. Fuller, senior assistant physician, Rome State School, for eleven years, resigned to accept an appointment as physician on the New York State Commission for Mental Defectives. Dr. Fuller assumed his new duties, December 1.

Summary of Outpatient Mental Clinics.—Under the direction of the state hospital commission, monthly outpatient clinics have been held in thirty-six communities throughout the state during the last fiscal year. These clinics are conducted for the benefit of paroled patients, discharged patients and others who seek advice concerning their mental condition. During the last fiscal year a total of 13,328 visits were made to these clinics. Of such visits 8,371 were made by paroled patients, 348 by discharged patients and 4,609 by persons who had never been connected with the hospital. The personnel of each clinic is furnished by the state hospital of the particular community.

Tentative Revision of Workmen's Compensation Law.—A joint legislative commission has just completed a tentative recodification and revision of the Workmen's Compensation Law of this state, copies of which will soon be distributed for study and criticism. Public hearings are to be held in New York, Albany and other places during this and next month, and the full revision is to be presented to the legislature early in February. Among numerous amendments are provisions for providing compensation for poisoning by liquids and gases, brass and zinc; also for loss of hearing in the schedule; empowering the department to allow claimants the mileage and fees for witnesses, and increasing the funeral expense allowance by $50. A new section seeks to protect the injured employee by defining the responsibilities of independent contractors and subcontractors.

New York City

Personal.—Dr. Henry Reiter has been appointed a member of the board of examining surgeons for the Department of the Interior Bureau of Pensions, and has been assigned to duty in New York.

OHIO

Physician Injured.—Dr. George W. Beery, Lancaster, suffered five broken ribs and internal injuries, recently, when his automobile was hit by a street car.

New Officers for County Medical Society.—The Logan County Medical Society, Bellefontaine, has elected Dr. Clyde K. Stratzman as president and Dr. Malcolm L. Pratt, secretary-treasurer, for the year 1922.

Allen County Tuberculosis Clinic.—Drs. Charles S. Rockhill, Cincinnati, and Warren C. Breidenbach, Dayton, volunteered their services as diagnosticians for the Allen County Tuberculosis Clinic, held, December 6-7, at Lima. Patients attending the clinic were referred back to their own physicians, and a report of the examination by the specialist together with his recommendations was submitted to the attending physician.

OREGON

University Hospital Project Abandoned.—The project for a university hospital, at Portland, has been indefinitely postponed in the belief that most of the functions from a teach-

ing standpoint will be fulfilled by the completion of the Multnomah County Hospital. The latter hospital is in process of construction and, it is expected, will be completed about June 1, 1922.

PENNSYLVANIA

Medical Clinic for Jail.—The recent state law having made clinics in jails compulsory, a medical clinic is being established at the Northumberland County Prison, Sunbury.

Plans to Aid Tuberculous Patients.—The Henry Phipps Institute, Philadelphia, in addition to free service at the hospital, to assure early diagnosis in suspected cases of tuberculosis, has announced that the institute will issue a series of bulletins or open letters to the medical profession containing the latest knowledge of the disease. Through an arrangement with the hospital of the Eagleville Sanatorium for Consumptives, there are a few beds available to which cases can be admitted for several days' observation and study. There will be no cost for these services.

Philadelphia

Personal.—Dr. John A. Drew, Chester, was elected a trustee of the State Hospital Association at the meeting held in Harrisburg, December 7. Daniel D. Test, superintendent of the Pennsylvania Hospital, has been elected president of the State Hospital Association.

TENNESSEE

Personal.—Dr. James R. Hudson, Alexandria, has been appointed a member of the Seventh District pension board at Liberty.

Hospital News.—The Methodist Hospital at Memphis has been sold to the government for the treatment of disabled war veterans.

TEXAS

Hospital News.—An army construction hospital will be built at Jefferson Barracks, at a cost of $2,000,000.——The first step in combating tuberculosis in eighteen states, comprising the territory of the Southern Baptists Convention, was the recent establishment, on a tract of 143 acres at El Paso, of the Southern Baptists Sanatorium. The institution is located on the side of Mount Franklin, at an altitude of 4,500 feet. Dr. H. F. Vermillion is the superintendent. In addition to this tuberculosis sanatorium, the Southern Baptists have seventeen regular hospitals in operation and seven others under course of construction. This hospital property is valued at approximately $7,000,000.——The contract has been awarded for the construction of the East Texas Hospital for the Insane, at Rusk.

WASHINGTON

Hospital News.—Work will be started at once on the construction of a $200,000 fireproof hospital at Olympia.

WEST VIRGINIA

Personal.—Dr. Rawley H. Powell, Fairmont, has been appointed by the governor as superintendent of State Hospital No. 3, to succeed Dr. Chesney M. Ramage, who has been head of the hospital for several years and has resigned to resume private practice.

WISCONSIN

State Board Appointments.—The governor has appointed as new members of the board of medical examiners Dr. Minnie M. Hopkins, Oconto; Dr. Jay B. Brewer, Jefferson, and Dr. Robert B. Cunningham, Cadott.

CANADA

Public Health News.—Dr. Charles J. O. Hastings, medical officer of health, Toronto, recently reported that mental surveys were made, by a specialist, of schoolchildren this year to the number of 32,886. Of these, 884 were found to be mentally defective, and 713 were recommended as cases suitable for industrial classes.——By a recent court order by Judge Denton, Toronto, all public health cases—except those laid under the Venereal Diseases Act—will be transferred to a special court for this class of case only.

Free Extension Courses in Universities.—The three provincial universities, Toronto, Western and Queens, are cooperating with the Ontario Medical Association in the latter's plan to further the education of provincial medical men by means of extension courses, as announced recently. The province has been divided into ten sections, and at a central point in each it has been arranged to hold various courses and give lectures covering a period of six weeks in each year. The plan has taken very well with the physicians of the province, many of them traveling hundreds of miles to attend the lectures. The purpose of these courses is to keep the physician in touch with recent developments in the medical world, as practitioners in outlying districts are unable to leave their communities to attend the universities. The courses are given free.

GENERAL

Field Secretary Appointed for National Committee.—Mr. Lewis H. Carris, Washington, D. C., who for some years has been engaged in vocational education work for the government, has been appointed field secretary of the National Committee for the Prevention of Blindness.

Cumulative Index of Transactions.—The National Tuberculosis Association announces that the cumulative author and title index of the transactions of the association from 1905 to 1920 is now ready for distribution. The index will be sent free to members of the association requesting it, and sold at a low price to nonmembers.

Norwegian Medical Editor Touring United States.—Dr. F. G. Gade, editor of the *Norsk Magazin for Laegevidenskaben*, Christiana, is making a tour of the United States, visiting various medical institutions. Dr. Gade is founder of the Institute for Pathology at Bergen, Norway, some years ago presenting sufficient money for the building and maintenance of this important research institution.

Radiographical Society of North America.—At the annual meeting of the society, held, December 8-9, at Chicago, it was claimed that the two most important accomplishments in the last year were the advance of high voltage roentgen-ray apparatus and the shortening of the wave lengths of the roentgen-ray beams, thus making it possible to treat cancer internally. Dr. Russel D. Carman, Rochester, Minn., was elected president to succeed Dr. Alden Williams.

Proposed Increase of Tax on Medicinal Whisky.—Amendment of the tax law enacted at the last session of Congress to increase the levy on whisky sold for medicinal purposes from $2.20 to $6.40 a gallon is being proposed by Representative Green of Iowa, ranking Republican member of the House Ways and Means Committee. The increased estimate of revenue to the government would yield from $20,000,000 to $40,000,000 annually.

Medical Brotherhood of Missions.—Dr. John G. Vaughan, medical secretary of the board of foreign missions of the Methodist Episcopal Church, has recently organized in his church a medical brotherhood for missions, for the promotion of more direct and effective cooperation between physicians working in isolation in mission lands and their medical confrères in the United States. The president of this brotherhood is Dr. Irving S. Haynes and the secretary, Dr. Daniel S. Dougherty, both of New York City.

Bill to Give Surplus Medical Supplies to Russia.—With virtually no opposition, the Senate passed the Wadsworth bill authorizing the War Department to turn over its surplus medical supplies to the American relief administration for use in the famine districts of Russia. The measure went to the House, where it was referred to the House Military Committee. This committee promptly reported the bill favorably to the house with an amendment limiting the cost value of the supplies to $4,000,000. Distribution of these medical supplies would be confined to the Volga basin and Russian Armenia. The House is expected to pass the measure as soon as it is taken up.

Bequests and Donations.—The following bequests and donations have recently been announced:

Medical School of Harvard University, Boston, $200,000 to establish a fund, the income to be used to investigate the cause and cure of cancer, by the will of Hiram Francis Mills of Hingham, Mass.

Central Maine General Hospital, Lewiston, Me., the bulk of his $100,000 estate, for the erection of a wing to the hospital, by the will of Charles Horbury of Lewiston.

Presbyterian Hospital, Philadelphia, $50,000 for a memorial to Joseph and Anna Tomlinson, by the will of Joseph A. Tomlinson.

Lancaster General Hospital, Lancaster, Pa., $25,000, at the death of his widow, by the will of Harry A. Schroyer.

Jefferson Hospital, Philadelphia, $5,000 by the will of Anna C. Nice.

Mount Sinai Hospital, New York City, $5,000; Montefiore Home and the Hebrew Orphan Asylum, each $2,500, by the will of Mrs. Caroline Bookman.

West Philadelphia Hospital for Women, Philadelphia, $250, by the will of Mary A. Burkhart.

Call for Conference on Narcotic Drugs.—Representative Julius Kahn, chairman of the House Committee on Military Affairs, has presented a resolution to Congress requesting the delegates to the Conference on the Limitation of Armament to call an international conference for the suppression and regulation of the commerce in drugs. This resolution was referred to the House Foreign Affairs Committee, by which a thorough investigation of the international traffic in habit-forming drugs is to be made. The investigation will be concerned principally with the enormous increase in the underground sale of drugs in the United States, including all the ramifications. The American delegation's special advisory committee on Pacific and Far Eastern questions of the Limitation of Armament Conference, has made a study of the traffic, and the results of this inquiry will be presented to the committee.

Physiotherapy Clinics for Physicians.—A two days' demonstration of physical therapeutics, open to physicians generally, will be held under the auspices of the U. S. Public Health Service. The American Electrotherapeutic Association and the New York Electrotherapeutic Society are arranging a joint midwinter clinical session, to be held December 29 and 30 at U. S. Public Health Service Hospital No. 61, at Fox Hill, Staten Island, N. Y. There will be explanation and demonstration of all physical modalities, and of the results obtained. The opening meeting with papers on "Physiotherapy in General" by Dr. Chris M. Sampson of Staten Island, and Dr. Frank B. Granger of Boston, will be held at the New York Academy of Medicine, Wednesday evening, December 28. All medical men are invited to attend, and programs and admission cards may be obtained from Dr. Richard Kovacs, 223 East Sixty-Eighth Street, New York City, without expense.

Report of Interdepartmental Social Hygiene Board.—The annual report of the United States Interdepartmental Social Hygiene Board claims that seventy-five red light districts have been closed during the past year through the cooperation of the government and the local authorities. The sum of $2,450,000 has been apportioned among the forty-eight states by the board during the last four years, a similar sum being matched by the states, and these funds have been devoted to free arsphenamin, free treatment centers, informational publicity and repressive measures. Forty institutions, including Harvard University, Columbia, Cornell, Pennsylvania, Leland Stanford, Northwestern, Woman's Medical, Tuskegee, and thirty-three state universities and normal schools are cited as cooperating with the board in training teachers in the hygiene of these special diseases. Scientists, under the leadership of the board, the report avers, are devoting their energies to an organized campaign to better medical methods. The Social Hygiene Board has also been operating a protective service for the military forces of the government.

Appeal for Scientific Literature for Russia.—Prof. L. A. Terasevitch of the University of Moscow, in a recent letter to the Medical School of Harvard University, Boston, stated that among other privations incident to present conditions in Russia men of science have been for the last four years, deprived of the opportunity to follow the scientific literature. They are anxious to keep in touch with the advancement of science in their respective branches so as to be able to join in the work when reconstruction period arrives. Professor Terasevitch, who is particularly interested in questions concerning etiology and prevention of infectious diseases, requests those who may wish to cooperate in rehabilitation of medical sciences in Russia to send all the available literature and particularly reprints of original work on medical subjects to him, at the Moscow Scientific Institute, Sivzeff Vrajeck, 41. Dr. D. H. Dubrowsky, the representative of the Russian Red Cross in America, 47 West Forty-Second Street, New York City, will be glad to forward through the Red Cross all the literature intended for Professor Terasevitch.

Museum of Ophthalmologic and Otolaryngologic Pathology.—A plan has been outlined by the American Academy of Ophthalmology and Oto-Laryngology for the establishment of a museum in cooperation with the Army Medical Museum. The latter institution has agreed to set apart space for the display of specimens and to cooperate by sending reports to donors of specimens together with photographs, both of the gross specimens and of microscopic slides. All ophthalmologists and otolaryngologists are urged to send specimens for this collection. Specimens will be available for study by any reputable physician, and the Army Medical Museum is to prepare a pathologic exhibit for each meeting of the academy. It is suggested that specimens be sent in wide mouth bottles prepared as follows: First, a layer of cotton is placed in the bottom of the bottle, then the specimen, and then another layer of cotton; this is covered with a 10 per cent. solution of liquor formaldehydi and allowed to stand for twenty-four hours; the excessive fluid is poured off and the bottle is corked tightly and mailed to the section on Ophthalmologic and Oto-Laryngologic Pathology of the Army Medical Museum, Washington, D. C. A clinical record of the case also should be sent. The committee is preparing a file of lantern slides, charts, moving pictures, etc., used in the courses given by the section on instruction of the academy, and this material will be made available to members for teaching purposes. The committee in charge consists of Major George R. Callender, Washington, D. C., and Drs. Harry S. Gradle and Ira Frank, Chicago.

LATIN AMERICA

Treatment of Leprosy in the Philippines.—According to a law adopted by the last Philippine legislature, 500 lepers are receiving special treatment in the Culión colony. Two hundred are treated with ethyl esters of chaulmoogra oil, 100 with a formula prepared by Dr. E. Mercado, fifty with sodium gynocardate and fifty with sodium morrhuate.

Infant Welfare Congress in Brazil.—The Third South American Infant Welfare Congress will be held next year in Rio de Janeiro. The committee in charge of arranging for Uruguayan participation in the congress is formed as follows: president, Dr. L. Morquio; first vice president, A. Rurene; second, Dr. J. J. Amézaga; third, Dr. V. Sicardó Anaya; secretaries, Drs. D. Regules and A. Z. Pujol; members, Dr. R. Schiaffino, E. Fournier and Miss L. Hourticou.

Antinarcotic Laws in Brazil.—A new law has been adopted in Brazil aiming to suppress the abuse of cocain, morphin and alcohol. Hereafter poisons and narcotics can be imported only after a license has been obtained from the National Department of Public Health. Such substances can be sold by druggists only on prescription of a physician or a dentist. A sanatorium is also created for the treatment of intoxications by alcohol or narcotics. Specific provisions are made as to the commitment of alcohol or drug habitués. The law was prepared by Dr. Galdino de Siqueira and approved by a commission presided over by the secretary of justice.

Personal.—Dr. Jorge E. Cavelier of Bogota, Colombia, is now in Chicago, taking a postgraduate course in surgery.——Dr. G. Gastañeta, prominent surgeon of Lima, who has been visiting eastern cities, has left with his family for Peru.——Dr. Juan Portell of Havana, Cuba, and Dr. Pedro del Pino of Argentine, are now in New York on their way to Europe.——Dr. Rubén Andino Aguilar of Tegucigalpa is now in New York on his way to his country from Europe.——Dr. Ramón Pardo of Oaxaca, Mexico, is acting as governor during the absence of the governor.——Prof. O. Silva Araujo of the University of Rio de Janeiro recently lectured at Buenos Aires on the prophylaxis of venereal disease, leprosy and cancer in Brazil, with lantern slides and casts.——Dr. C. P. Colistro of the chair of obstetrics and gynecology at the University of Montevideo also lectured recently as interchange professor at Buenos Aires, his topic being "Transfusion of Blood."——Dr. F. Grande Rossi has been appointed professor of tropical pathology at the University of Havana.——The *Repertorio* of Bogota states that Dr. L. Cuervo Marquez has resigned his post as *ministro de gobierno*, and Dr. Aristóbulo Archila has been appointed his successor.——Dr. J. Ortiz has been elected president and Dr. A. Estorino, vice president, of the Sociedad de Estudios Clinicos, recently organized at Matanzas.

FOREIGN

Change of Editor.—Dr. C. Bello Moraes, editor of *A Medicina Contemporanea* of Lisbon, has resigned on account of age and ill health and will be succeeded by the present assistant editor, Antoniode Azevedo.

National Medical Association of China.—The next conference of the National Medical Association of China will be held in Shanghai, Jan. 30 and 31, 1922. The association has issued a directory of Chinese medical graduates, comprising 1,160 names, with year of graduation, qualifications, present position held and present address.

Resolution Advocating Prophylactic Injection Against Typhoid.—The *Gazette des Hôpitaux* relates that the Paris Société de Pédiatrie recently voted a resolution to the effect that as typhoid is now prevalent in children's hospitals,

preventive vaccination should be organized by the authorities in the dispensaries, and the fact advertised to inform the public.

A Predetermination-of-Sex Expert.—The public health authorities of Saxony have published a notice warning the public against a certain C. L. Marcus who is lecturing throughout the country claiming to be able to teach predetermination of sex at will. Dr. Strassmann of Berlin investigated his claims and announced that they were based on erroneous deductions.

Graduate Courses in Pediatrics in Italy.—Two courses are announced at the children's department of the Policlinico Hospital at Rome. One began Dec. 1, 1921, and the other will begin March 1, 1922. Applications for the course must be in the hands of the rector of the University of Rome before Feb. 25, 1922, with inscription fee and credentials. The professors giving the course are Luzzatti, Modigliano, De Villa, Santangelo, Genoese and Sironi.

Centenary of Pasteur.—Plans are under way in France for the celebration of Pasteur's centenary in 1923. The celebration will chiefly consist in an international exhibition of hygiene and bacteriology which will be held May 1-Oct. 31, 1923, at Strasbourg where Pasteur began his epoch making researches. A monument to Pasteur will be unveiled at the same time. The celebrations are in charge of the University and city of Strasbourg, the Pasteur Institute of Paris and the Pasteur family.

Antirat Measures at Berlin.—The *Münchener medizinische Wochenschrift* relates that November 23 was set apart by the municipal authorities for extermination of rats at Berlin. The owners of all the real estate in the city were ordered under penalty to distribute in appropriate places on their property on that day effectual rat poison to the value of 50 marks. The owners and occupants of the property were given permits to obtain the rat poison. Our exchange adds that England recently held an antirat week.

The Souvenir Volume of Medical Victims of the World War.—A committee has been at work for some time collecting data to publish the "Livre d'Or" as a monument to the French physicians who lost their lives in the World War, and it is now ready for publication. It gives the biography of each, with citations, decorations, etc., and a number of reviews written by the leading authorities on the work of the profession, the achievements in organization, in surgery, etc., a historical retrospect profusely illustrated. The work is for sale for 50 francs to the public, to subscribers for 40 francs. The treasurer of the committee is M. Bongrand, 5 rue de Surène, Paris.

An "Untoward By-Effect" of the Official Quackery Investigation in the Netherlands.—THE JOURNAL described last year the work of the official committee appointed to study objectively and report on the methods employed by unqualified persons in treating the sick. Quacks were invited to practice their methods in some of the hospitals under supervision of the committee, but only a few accepted the invitation. The committee gave them every opportunity but no benefit from the treatment was apparent. One of the quacks who was thus allowed opportunity to apply his method has since been making capital out of the occurrence, impressing the public with the "official sanction" his method had received. The public of course knows nothing of the ultimately absolutely unfavorable verdict of the committee.

The London Fellowship of Medicine and Post-Graduate Medical Association.—The London Fellowship of Medicine and Post-Graduate Medical Association, with the cooperation of various special hospitals, is arranging to hold a series of special courses in general and special subjects during the forthcoming year, and the first of these, a six weeks' post-graduate course in general medicine, will be held from Jan. 9 to Feb. 15, 1922. The course will consist of a morning and afternoon session, and the ground covered will include pulmonary affections, heart disease, disease of the nervous system, fevers, lunacy, etc. The program will be so arranged as to entail a minimum amount of traveling each day. The number attending the course will be limited. Application for further particulars as to syllabus, fees, etc., may be made to the secretary of the Fellowship, 11 Wimpole Street, W. 2, London.

Deaths in Other Countries

Sir **George Joseph Hamilton Evatt,** major general, R. A. M. C., London, Eng., author of many works on military medical administration, died, November 5, aged 77.——Dr. **A. J. McCymont,** Transvaal, South Africa, August 29.——Prof. **F. A. Bainbridge,** captain, R. A. M. C., London, noted for his works on different types of paratyphoid bacilli.——Dr. **Alfred Exner,** professor of surgery at the University of Vienna, succumbed to metastasis from cancer of the kidney, aged 47. He had published sixty works on surgical topics. ——Dr. **A. Gruss** of Vienna, a leader in the organization of the profession.——Dr. **K. F. Carøe,** prominent in medical journalism and historical research in Denmark, honorary member of the Swedish Medical Association, aged 70.——Dr. **P. Schmidt,** surgeon general of the German navy.——Dr. **Armaignac,** at one time president of the Bordeaux Medical Society.——Dr. **L. Vetere,** physician to the Italian Hospital at Buenos Aires.——Dr. **Luis Córdova y Bravo** of the Sanatorium del Centro Balear, Cuba.——Dr. **Roquet Macouset,** formerly professor of pediatrics at the University of Mexico and author of works on children's diseases and hygiene.—— Dr. **J. de Giacomi,** instructor in internal medicine in the University of Berne.——Dr. **T. S. V. Petersen,** retired in 1909 from the chair of clinical medicine in the Copenhagen medical faculty, aged 82.——Dr. **A. T. Sælan,** formerly professor of botany at the University of Helsingfors and at the same time medical director of a hospital, aged 86.——Dr. **J. F. Brust,** chief of the medical service in the Netherlands insurance system.

Government Services

Hospital for Negro Service Men

Secretary Mellon of the Treasury Department has announced that the sum of $2,500,000 will be expended to provide a hospital for tuberculosis and nervous and mental cases for negro former service men at Tuskegee, Ala. Approval of this expenditure has been completed and the work will begin at once. The plan on which the hospital is to be constructed contemplates its enlargement to 1,000 beds. The institution is to be placed on a site donated to the United States by the board of trustees of the Tuskegee Normal and Industrial Institute. The purchase of certain tracts of ground is included in the appropriation and the provision of a spur of railroad from the Western Railroad of Alabama of approximately 2 miles to the hospital site has already been arranged. Another approval of expenditure made by the Secretary of the Treasury was for the provision of a permanent former soldier hospital for nervous and mental cases at Palo Alto, Calif. The sum to be expended amounts to $1,400,000. The U. S. Public Health Service is at present operating a hospital on this site with a capacity of 550 beds in temporary buildings. These buildings will be made permanent, and the capacity enlarged to 1,000 beds.

Naval Research Laboratory Nearing Completion

The naval research and experimental laboratory being constructed on the Potomac River at Bellevue, D. C., is rapidly nearing completion. The buildings are substantially completed and ready to receive their equipment. Funds are available for the equipping and fitting out of the buildings, but money for maintenance and operation is yet to be appropriated by Congress. Capt. E. L. Bennett, who has been selected for duty as director of the laboratory, has been ordered detached from the battleship *New York*, and he will report at the Navy Department for duty about the first of the year.

Examination for Public Health Service

Examinations for entrance into the Regular Corps of the U. S. Public Health Service will be held, Jan. 9, 1922, at Washington, D. C., and San Francisco. Candidates must be between 22 and 32 years of age, and graduates of a reputable medical school. They must pass satisfactory oral, written and clinical tests before a board of medical officers. Successful candidates will be recommended for appointment by the President with the advice and consent of the Senate. Requests for information or permission to take this examination should be addressed to the Surgeon-General, U. S. Public Health Service, Washington, D. C.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Nov. 14, 1921.

Liability of a City Corporation for Poisoning from Berries in a Public Park

In the House of Lords—the supreme court of this country—an unusual case has been decided. Some children were in the Botanic Gardens, Glasgow, which are open to the public as a park. They went to the playground surrounding the band stand, a part of the gardens known to be frequented by children. At that time the Glasgow corporation, which controls the park, had growing in a small plot immediately adjoining the playground specimen plants of various kinds—wheat, barley, oats and atropa belladonna, which was bearing berries resembling small grapes and very attractive to children. This plot was enclosed by a wooden fence but was open to the public, access being obtained by a gate fastened by a wire loop. The plot was frequented by the public and by students. The gate could easily be opened by a young child. The children picked and ate a few of the berries. They soon afterward became ill, and a boy, aged 7 years, died. His father brought an action against the corporation on the grounds that the death of his son was due to its fault. The corporation submitted that if the facts stated were proved, no jury would be entitled to find that it was responsible for the death of the child, as the circumstances disclosed no fault or breach of duty on its part as owners of the botanic gardens. The judge (Lord Hunter) upheld this plea, but his judgment was reversed on appeal to a higher court, from which a further appeal was now made to the House of Lords.

In giving judgment, the president, Lord Buckmaster, said that it would have been less easy to find the pathway through the difficulties which the case presented had not the road been already traveled by learned judges, who left clear and definite sign posts. Notwithstanding the fact that there was a fence, the ground on which the belladonna grew was open to the public. There was no isolation of the shrub, or any warning of its dangerous character. The appellants must have known that it was probable and indeed practically certain, that children would be tempted and deceived by the appearance of the shrub and would eat of the berries. Did the allegations establish a cause for action by the father to obtain the money reparation which the Scotch law permits? The important facts to be borne in mind were that the children were entitled to go to the spot where the shrub grew, that there was no warning giving parents or those who had custody of children any knowledge of the dangers, and that the danger was known to the appellants. Lord Sumner had laid down that "the presence in a frequented place of some object of attraction tempting a child to meddle where he ought to abstain may well constitute a trap, and in the case of a child too young to be capable of contributory negligence it may impose full liability on the owner or occupier if he ought as a reasonable man to have anticipated the presence of a child and the attractiveness of the peril of the object." Lord Buckmaster could see no difference between the conditions there postulated and those that obtained in the present case. The appeal was therefore dismissed.

The Victor Horsley Memorial Fund

A meeting of the executive committee of the Victor Horsley Memorial Fund has been held. Sir Frederick Mott, the honorary treasurer, stated that $5,125 had been promised, of which $4,375 had been paid. The number of subscribers, exclusive of groups, was 229. The subscription list will close, December 31. The following recommendations from the executive subcommittee were adopted unanimously: (1) That the Victor Horsley Memorial Fund be invested in the names of a board of trustees consisting of the president of the Royal Society, the president of the Royal College of Surgeons of England, the president of the British Medical Association, the senior physician of the National Hospital for the Paralyzed and Epileptic, and the senior surgeon of University College Hospital in virtue of their office, together with Mr. Edward Robinson, son-in-law of Sir Victor Horsley, and Mr. E. J. Domville, one of the honorary secretaries of the fund, the vacancies caused by the resignation or death of either of the two last not to be filled. (2) That the trustees shall triennially appoint a lecturer to deliver a lecture in London, under the title of the Victor Horsley Memorial Lecture. (3) That no limitation be placed on the trustees as to the country or profession from which the lecturers should be appointed, or on the subject of the lecture.

Self-Disinfection in the Prevention of Venereal Disease

In accordance with previous reports to THE JOURNAL, the ministry of health has issued to county borough councils a circular stating that the government has decided that it cannot give official support to self-disinfection as a policy. Nevertheless, twenty-one local councils have on their own behalf adopted the immediate disinfection policy of the Society for the Prevention of Venereal Disease.

Ex-Soldiers in Lunatic Asylums

An aftermath of the war which has exercised some persons considerably is the treatment in ordinary lunatic asylums of men who have become demented by the strain of the war. In the House of Commons, the government was asked whether the treatment allowance on which some 6,000 ex-service men depended was paid on the condition that those men consented to being confined in lunatic asylums, and the allowance was refused in respect of patients being treated and anxious to be treated in certain private institutions approved by the lunacy authority, but to which the stigma associated with lunatic asylums was not attached; whether on Jan. 1, 1919, 2,507 ex-soldiers were confined in lunatic asylums and the number had risen to 4,673, Jan. 1, 1921, and to 6,435, October 27; whether bitter complaints were continually emerging from the men confined, and whether the government would set up a commission to hear complaints. The minister of pensions replied that the lunacy law requires that every person certified as insane shall be sent to an institution approved by the lunacy board, save that, under certain conditions, a single person may be placed in a private house not specifically licensed for the reception of lunatics. Treatment allowances are granted in respect of all certified patients whose insanity is due to war service who are receiving treatment in approved institutions. It was not accurate to suggest that a large number of complaints is received as to the conditions of treatment. On the contrary, the number is small, and on investigation the complaints invariably prove to have been made on unsubstantial grounds, or to be of minor importance. He did not consider that there were any grounds for appointing a commission.

"The Worst Teeth in the World"

In a lecture delivered on "Public Dental Health" at the British Dentists' Hospital, Dr. Harry Campbell said: "We have the worst teeth in the world." He estimated that at least a hundred million teeth had been extracted from people living in this country, while another hundred million had been spontaneously shed and the number of decayed teeth

was about 200,000,000. Diseases of the teeth were for the most part due to faulty dietetic customs and were to that extent preventable. The shedding of teeth in old age was not a senile change. With healthy sockets the teeth, far from loosening with advancing years, became more firmly fixed. The British people had lost the art of mastication. They did not chew; they sucked their food.

PARIS

(From Our Regular Correspondent)

Nov. 18, 1921.

A Strange Defense of "Patent Medicines"

In comparing the warfare waged by the American Medical Association against "patent medicines" and the culpable indulgence manifested in France toward this subject, I recently expressed regret that French medical associations did not wage an equally good fight against this shameful exploitation of the public (THE JOURNAL, Oct. 22, 1921, p. 1350). How much more regrettable it is to note that certain medical journals consent to become propagandists of such medicines. A circular letter addressed by the managing editor of the *Languedoc médical* to manufacturers of "patent medicines," with the view to obtaining advertisements from them for his journal, has been forwarded to me, and reads, in part, thus: "This monthly review has a committee on management, composed of numerous practitioners, physicians and druggists of our city and the Mediterranean region, in addition to the eminent professors of our medical faculty. You will not forego the advantages to be derived from the publicity that you may secure through our publication when we inform you that the said committee takes a particular interest in our advertisers." Similarly, an editorial in the *Journal des praticiens* emphasizes one advantage of pharmaceutic specialties often lost sight of. Taxes on such specialties are a tremendous source of revenue to the national treasury. Therefore, "the larger the amount paid by the manufacturers of pharmaceutic products, the lower are the taxes for the taxpayers." The journal concludes: "A double advantage appears, therefore, to result from prescribing these products, which are to be recommended owing to their careful preparation, namely, the certainty of efficacious action, and, furthermore, from a nationalistic point of view, an interest in the annual budget." Let us hope that the interests of the national budget may always coincide with the interests of the patients.

Results of Artificial Pneumothorax in Pulmonary Tuberculosis

In his work on pulmonary tuberculosis, recently published (Masson & Cie, publishers, Paris, 1921), Dr. Léon Bernard, professor in the medical department of the University of Paris, dwells at length on the treatment with artificial pneumothorax. Reviewing the indications for this method, he remarks that they are usually found in the following conditions: unilateral lesions, freedom from pleural adhesions, and the relative gravity of the lesions. As regards the first condition, Bernard holds that it should not be interpreted too strictly. When auscultation, followed by a roentgenographic examination, reveals very small, discrete lesions in the lung opposite the one to be treated, they do not necessarily constitute a contraindication to intervention. It is not solely the extent of the lesion that should be considered, but also its activity. As for the condition of the pleura, we must distinguish (in the presence of adhesions), on the one hand, between small adhesions, few in number, soft and easy to sever, and on the other, multiple, fibrous and firm adhesions. The former are easily severed, if not by the first insufflation, at least very rapidly. With persistence they can be separated. The latter, on the contrary, are resistant and constitute an insurmountable obstacle, compelling the abandonment of the treatment. They are manifested most frequently at the beginning by the abrupt rise of pressure following the injection of small doses of gas. Under such circumstances we must desist, for, according to Bernard's personal observations, pneumothorax, applied by force, as it were, requiring the breaking up, laceration or at least stretching of adhesions, and causing possibly traumatisms of the parenchyma of the pleura, is usually extremely difficult, and, in certain cases, almost impossible. A roentgenographic examination does not furnish any positive evidence, much to the surprise of those who are not aware of the limited value of such examination. It might almost be said that a successful insufflation is the only proof that the pleura is free from adhesions or is at least detached from the lung. It is, therefore, advisable, as a rule, to state, before beginning the operation, that there is no definite assurance that insufflation can be accomplished, for, even in the cases appearing to be most favorable, the lung may not be detachable.

As regards the gravity of the lesions, it was thought at first that pneumothorax should be applied to deep and extensive lesions, with cavities; but the results in such cases are quite mediocre. Besides the general condition, which is usually bad under such circumstances, the lesions are for the most part associated with old pleural adhesions. The lesions that present the best outlook are of the chronic, ulcerocaseous type; but such lesions must be attacked as soon as possible; in fact, as soon as it is discovered that they have developed and have no tendency to heal spontaneously. As a rule, the clinical onset of the disease is still quite recent; we may note fever, emaciation, expectoration of bacilli and ulceration of the parenchyma (rapidly manifest on auscultation by the presence of crepitation). It is with such patients (doomed, usually, to a fatal evolution) that we obtain the most complete and the most satisfactory results. Caseous manifestations occurring, from time to time, in slower types constitute, likewise, an excellent indication.

When we discover patients fulfilling these conditions, it is advisable, before applying the treatment, to keep them under surveillance for a time, to see whether the lesion in process of evolution does not heal spontaneously. If, after a period of observation, it is found that the evolution continues, intervention is indicated, and the chances for the patient's recovery are excellent. Gravity of lesions, as far as indications for a therapeutic pneumothorax are concerned, does not necessarily mean their extent. By "gravity" is meant rather the tendency to progressive and fatal evolution. It is to the class of lesions described that pneumothorax must be applied, but the treatment must be instituted at the onset of the infection, and if applied soon enough, it will check the evolution of the disease, but if applied too late it will have practically no effect.

Among indications for pneumothorax, Bernard includes hemoptysis, but refers only to grave, abundant and intractable hemoptysis, which constitutes a grave danger in itself. It has been said that enteritis constitutes a contraindication to pneumothorax. Bernard does not agree with this opinion, and he has observed cases in which enteritis was not only no obstacle, but was, on the contrary, markedly improved by pneumothorax.

To sum up, Bernard holds that no other therapeutic method offers to tuberculous patients, almost doomed to die, such chances for a complete and final cure or at least a prolongation of life quite unhoped for. But the method requires, on the part of the physician, keen judgment and a certain amount of experience, and, on the part of the patient, stedfast perseverance, in order that he may be a real collaborator of the physician.

MADRID

(From Our Regular Correspondent)

Oct. 20, 1921.

University Autonomy

One of the results of the Moroccan uprising was the fall of the existing cabinet. It was followed by another so-called national government formed by persons belonging to different political parties who had joined together only in order to solve the Moroccan problem. The present minister of public instruction issued a decree granting self-government to Spanish universities without waiting to discuss the matter in parliament. At the Madrid medical school only half of the professors have been elected by competitive examinations. Some important chairs, for instance that of clinical medicine, have been vacant over eight years. Not a month has elapsed as yet from the granting of autonomy, and we have already witnessed a protest from the assistant professors, who emphasize the contempt in which they are held by the professors, who in the statutes suggested by them for the organization of teaching do not mention their assistants, who are the ones really in charge of the work. We have also seen in the newspapers the protest of a professor of clinical surgery in Madrid announcing that he is the only professor who can teach officially the subject of urology in the medical school, and calling attention to the fact that this subject is being taught with excellent facilities and by recognized authorities in the hospitals of San Juan de Dios, General and the Princesa. One of the Madrid schools, that of arts and letters, is already suggesting in its new rules the suppression of daily classes and dividing in two each course in order to collect double fees.

Foreign Physicians in Spain

Not so long ago I stated in one of these letters that the minister of public instruction had limited the practice of medicine, establishing requisites which should be fulfilled by foreign physicians. I mentioned afterward that a more radical minister had forbidden the practice of medicine by physicians graduated from foreign colleges. This measure was originated by the protest of some provincial medical society which wanted to prevent from practicing some French physicians who had grown old practicing medicine precisely in that province. The protest of this medical society was not due to malpractice or professional misbehavior by foreign physicians. It was caused by lack of reciprocity for our physicians in the country from which these physicians came. I foresaw at the time that those foreign physicians would practice after all. What I could never guess is that the present minister, basing himself on a very old law, would grant permission to practice medicine in Spain to all physicians presenting diplomas obtained in foreign universities, recognized by their respective countries. At the time when so many German and Austrian physicians are getting ready to abandon their countries because economic conditions are unbearable, this opening wide of Spanish doors is an unfortunate act that cannot be excused even by diplomatic or international considerations. Before issuing that decree, the minister, rather than granting self-government to universities, could have suppressed medical schools. Foreign colleges will furnish us with more physicians than we actually need.

Appointment of a Physician as Minister of Religion and Justice

A physician who is at the same time a remarkable writer and prominent politician, a former minister of public instruction and afterward head of the commission sent to Chile to represent Spain at the centenary celebration, Dr. José Francos-Rodriguez, has been appointed minister of religion and justice, in the so-called National Ministry. All who know Francos-Rodriguez feel sure that he will be a great success in his new position. He has already shown his competence, discussing in his speech at the opening of the judicial year the subject of jail hygiene.

BELGIUM

(From Our Regular Correspondent)

LIÉGE, Nov. 7, 1921.

Councils on Discipline

The thirteenth congress of professional medicine revived the question of councils on discipline. In 1910, the congress went on record as approving the following proposal, which emanated from Dr. Dejace: "The sixth congress of professional medicine, without adopting any fixed resolutions with regard to a system of organization, expresses itself in favor of the creation of councils on discipline." But this action remained a dead letter, probably because it was not approved by more than two thirds of the members present at the congress, and also because the opposition from its opponents seemed rather strong, which made a realization of the proposal appear impractical. Since then the social conditions have changed considerably; syndicates have continued to grow in importance; the principle of free choice of a physician is generally admitted, and social insurance seems on the verge of being recognized. The founding of large medical associations has paved the way for the creation of such councils. The medical unions have all provided in their by-laws for repressive measures against physicians guilty of misdemeanors or unworthy conduct. But this repressive action has been without result for the reason that these unions are not in a position to impose penalties that seriously affect the material interests of the guilty.

The repression of abuses must be achieved by the physicians themselves and by them only. The dignity of the medical profession demands that its members be judged by their compeers; only physicians are competent to pass on their faults. They alone will have the necessary firmness to dispose of unworthy members, enough indulgence to excuse momentary weakness, and sufficient fraternal influence to reawaken a sense of moral obligation in those whom a moment of forgetfulness caused to wander from the path of duty. Then again, the subjection of physicians to laws freely enacted by themselves will greatly enhance the prestige of the profession.

The communication presented by Dr. Kaisin recommends that some such body as the Fédération médicale, which is an amalgamation of professional associations, be endowed with the powers of such a tribunal. It would thus become an ideal and complete organism for the defense of medical interests, for it would take charge not only of material interests but also of moral interests, which are, moreover, in the last analysis, the best guarantee of material prosperity. The most valid objection that may be raised is the question of the effectiveness of penalties imposed on delinquents. For example, how would a physician whose name, by a decision of a council on discipline, has been stricken from the list of physicians in good standing, be prevented from practicing medicine if clients should solicit his services? As long as the practice of medicine was still regarded solely as a matter between individuals, the exclusion of a physician from the ranks appeared to be rather illusory. But times have changed; and, as time goes on, professional questions will more and more be taken up and solved by the syndicates, and if, as seems likely, social insurance shall be introduced, it will be a question of establishing the relationship of groups of patients and groups of physicians. The medical unions, in their dealings with the syndicates and the groups of insured, will be able to demand that they accept the

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disciplinary decisions and that they agree not to employ physicians who have been excluded from the recognized medical bodies.

This general study of one of the most important questions on the order of the day was greatly appreciated by the congress, which declared in favor of the establishment of councils on discipline.

BERLIN

(From Our Regular Correspondent)

Nov. 18, 1921.

Municipal Tuberculosis Welfare Centers

The city council of Berlin established, October 1, four tuberculosis welfare centers. The task of these centers will be the housing and guidance of all tuberculous persons referred to them by physicians as being in need of care, which includes all those threatened with tuberculosis or suspected of having it. Their problem includes also the providing of proper treatment. The greatest importance will be attached to the rendering of as careful a diagnosis as possible. In order to attain this purpose, the aid of all modern clinical methods of investigation will be called into play. This exact diagnosis will make it possible to make an especially careful selection of patients for tuberculosis rehabilitation centers. Supervision and guidance are also extended to the families of the tuberculous, with especial reference to housing conditions. This service is performed by specially trained nurses—so-called tuberculosis welfare nurses. No treatment is given in the tuberculosis welfare stations.

The Reorganization of Public Health Administration in Berlin

The public health administration of Greater Berlin, which comprises more than 4,000,000 inhabitants, has been undergoing a reorganization, as I mentioned in a previous letter. The plans for reorganization, which were outlined at an earlier date, have been developed in detail during the last few months, so that, according to the announcement of the director of the central bureau of the municipal public health system, as contained in the *Deutsche medizinische Wochenschrift*, the essential features may be summed up thus: The public health system of the city of Berlin is administered by a body presided over by the municipal public health commissioner (Stadtmedizinalrat). The field of endeavor is comprised by the activities of (1) the general public health service; (2) the central public health bureau; (3) infirmaries, health and welfare centers, including hospitals for the insane; (4) infirmaries in the orphan homes; (5) the sick-ward at the municipal employment office; (6) social hygiene; (7) the health center for infants and young children; (8) the health center for cripples, and (9) the rescue work center. The deputation or administrative body is composed of five members of the magistracy, sixteen city aldermen, and six so-called citizen deputies (*Bürgerdeputierte*); that is, citizens who are members of the municipal legislative body only by virtue of their connection with the above-mentioned deputation. Experts from the central public health bureau, the hospitals, etc., may be summoned to take part in the sittings. The deputation appoints committees for the infirmaries, hospitals, homes for the tuberculous, infant welfare and social hygiene. The central public health bureau may be called on by the deputation and the committees to carry out their plans. It deals also with matters pertaining to the work of physicians to the poor, such as the control of prescriptions and food for the sick. It is active also in the supervision of home conditions, home care and vocational guidance. The central public health office is divided into four departments: (1) the institute of hygiene and bacteriology, with such subdepartments as the disinfection bureau, vaccination bureau, and other general measures for the control of epidemics; (2) the chemical institute; (3) social hygiene, which, aside from social hygiene in particular, deals with the combating of tuberculosis, and the suppression of venereal disease and alcoholism; infant, child and juvenile welfare (from the health side); health culture in the schools, and welfare work among cripples and psychopaths; (4) the medical department, which handles the affairs of the institutions for the insane; of the hospitals, homes for the tuberculous, and the sick-ward in the shelter for the homeless; furthermore, the medical care of the poor. The rescue work center, including the transportation of patients and the central information bureau in regard to beds available in hospitals, is under a special director, who handles also some questions pertaining to welfare work among the war injured and the poor. The office for the general control of prescriptions is in charge of a chief pharmacist. Furthermore, there are employed in the central public health office: five bacteriologists (one being a veterinarian), seven chemists and one botanist. In addition, there are six medical assistants and a large number of women assistants. The two institutes of the central public health office extend their activities to Greater Berlin, as a whole, but the examining laboratories in certain quarters of the city, which were formerly independent (Charlottenburg, Schöneberg, etc.), will continue to function. The local administration of the hospitals in the old municipal communes will also continue. The same is true of the hospitals for the insane located in the various sections of Greater Berlin.

A Monument to Gaffky

Professor Gaffky—a friend of Robert Koch, and his oldest pupil—who for many years was the director of the Berlin Institute for Infectious Diseases has been honored with a monument erected over his grave in Hanover, his native city, by his pupils and friends. The monument bears a plaque with the likeness of Gaffky, on either side of which is emblazoned an Esculapian staff.

Marriages

JAMES ERNEST BAYLIS, Major, M. C., U. S. Army, Baltimore, to Mrs. Mary T. Borger, at East Islip, L. I., November 5.

ARTHUR WASHINGTON BURNHAM, Lebanon, N. H., to Miss Grace Albee Love, at Thompsonville, Conn., November 1.

ROBERT RUPEN JANJIGIAN to DR. JESSIE MARIE PETERSON, both of Norristown, Pa., at Allentown, Pa., September 1.

CHARLES SIDNEY STODDARD, Santa Barbara, Calif., to Mrs. Agnes E. Pease of Long Beach, Calif., October 5.

JAMES WILLIAM MOUNSEY, Spokane, Wash., to Miss Elizabeth Crowley of Rockford, Wash., October 15.

ARNOLD WALTER GANZEL, Cincinnati, to Miss Irene Emma Carter, at Dayton, Ohio, November 25.

ELMER WATERS PIKE, Sudbury, Vt., to Miss Helen S. Crump of Gloversville, N. Y., September 21.

WILLIAM TELL WILDHABER to Miss Louise Beatrice Stoll, both of Beatrice, Neb., October 20.

AUBREY HUMPHREY PEMBER, Janesville, Wis., to Miss Hazel Lucknow of Chicago, October 22.

ARTHUR BUTLER MCGRAW, Detroit, to Miss Leola E. Stewart of New York City, October 12.

LOUIS MORRIS GREENBERG, Sandoval, Ill., to Miss Elizabeth Sach of Chicago, November 6.

LEO HOWARD FLYNN to Miss Isabelle Larson, both of Eau Claire, Wis., recently.

NILS ALBIN KILLBERG to Miss Anna Nelson, both of Chicago, December 3.

Deaths

John Randolph Currens ✱ Two Rivers, Wis.; Rush Medical College, Chicago, 1878; former president of the State Medical Society of Wisconsin; for eight years member of the state medical board; member of the state central committee; chairman of district draft board during the late war; formerly mayor of Two Rivers for twenty years; founder of the tuberculosis sanatorium at Whitelaw; died, December 1, aged 56.

Isaac Montrose Taylor ✱ Morganton, N. C.; College of Physicians and Surgeons, New York City, 1882; superintendent, Broadoaks Sanatorium, Morganton, since 1901; president of the board of medical examiners, 1915-1916; member of the American Medico-Psychological Association and the medical advisory board of North Carolina; died, November 26, from heart disease, aged 64.

John Jones Goodwill, Laurel Hill, N. J.; University of Virginia, Charlottesville, 1908; member of the Medical Society of New Jersey, and the West Virginia State Medical Association; major, M. C., U. S. Army, during the late war; medical director of the Hudson County Hospital, Secaucus, N. J., where he died, December 2, from pneumonia, aged 36.

J. Morton Boice ✱ Philadelphia; Medico-Chirurgical College of Philadelphia, 1904; former clinical assistant to the genito-urinary department at his alma mater; chief of the medical clinic, St. Joseph Hospital; for several years secretary of the Philadelphia County Medical Society; died, December 2, from carcinoma of the bowel, aged 45.

William Henry Murray, Albany, N. Y.; Albany Medical College, 1869; postmaster of Albany since 1914; president of the common council, alderman, and formerly penitentiary, city and county physician; founder and president for thirty years of the Hospital for Incurables; dropped dead at his desk, November 30, from heart disease.

Charles Walter Swan, Branford, Conn.; Medical School of Harvard University, Boston, 1864; practitioner for over fifty years; for many years recording secretary of the Massachusetts Medical Society; served in the M. C., U. S. Navy, during the Civil War; noted botanist; died, December 2, at the home of his daughter, aged 83.

Henry Lee Rothman ✱ St. Louis; St. Louis University School of Medicine, St. Louis, 1913; assistant surgeon, U. S. Public Health Service; served as lieutenant, M. C., U. S. Army, during the World War; died, November 23, at the U. S. Public Health Service Hospital, St. Louis, from meningitis, aged 32.

Louis E. Newman, St. Louis; Jefferson Medical College, Philadelphia, 1883; member of the Missouri State Medical Association; former president of the St. Louis Medical Society; member of the American Association of Obstetricians and Gynecologists; died, November 18, from paresis, aged 60.

William Ford Arnold ✱ Washington, D. C.; University of Tennessee College of Medicine, Memphis, 1885; retired surgeon, lieutenant commander, U. S. Navy; died in November, at St. Elizabeth's Hospital, Washington, from paresis, aged 61.

Henry Plato Underhill, Wendell, N. C.; University College of Medicine, Richmond, Va., 1901; member of the Medical Society of the State of North Carolina; died, November 18, at the Mary Elizabeth Hospital, Raleigh, from heart disease, aged 44.

Abraham S. Bienenstock, New York City; New York University Medical College, 1892; formerly attending surgeon, Bellevue Hospital; member of the New York City board of health; died suddenly, November 27, from heart disease, aged 53.

Bernard A. O'Hara ✱ Waterbury, Conn.; Bellevue Hospital Medical College, New York City, 1882; for more than twenty years U. S. pension examiner for New Haven County; died, November 25, following a long illness, aged 62.

D. Walter Straub, Bethlehem, Pa.; Hahnemann Medical College and Hospital of Philadelphia, 1877; member of the consulting board, State Hospital, Rittersville; died, November 29, following an operation, Philadelphia, aged 66.

Elijah W. Lawrence, Newark, N. J.; Eclectic Medical College of Philadelphia, 1863; surgeon in the Civil War; served with the Chilean army in the war against Spain, 1866-1868; died, November 26, following a long illness, aged 78.

David Gregory Curtis, Chattanooga, Tenn.; Homeopathic Medical College of Missouri, St. Louis, 1860; practitioner over sixty years; naval surgeon in the Civil War; died, November 26, from ptomain poisoning, aged 85.

Charles J. Broyles ✱ Johnson City, Tenn.; University of Tennessee, College of Medicine, Memphis, 1888; member of the American Academy of Ophthalmology and Oto-Laryngology; died, November 28, aged 59.

Joseph W. Stoneburner, Leland, Ida.; Eclectic Medical Institute, Cincinnati, 1892; member of the Idaho State Medical Association; died, November 18, from injuries received in an automobile accident, aged 76.

Elizabeth Lillian Radom, Hartford, Conn.; Woman's Medical College of Pennsylvania, Philadelphia, 1915; was found dead in the road near Fairfield, December 4, presumably from poison, self-administered, aged 29.

Stayner Ellis, Windsor, Ontario, Canada; University of Toronto, 1910; served as major, R. A. M. C., during the World War; died, November 18, at the Harper Hospital, Detroit, from chronic nephritis, aged 37.

George Wakeman Osborn ✱ Bridgeport, Conn.; College of Physicians and Surgeons, New York City, 1887; city physician; member of the board of health; died, October 25, from bronchopneumonia, aged 61.

John Luther McMillan, Red Springs, N. C.; University of Maryland, Baltimore, 1881; surgeon to the Flora MacDonald College, Red Springs; died at that institution, November 8, from heart disease, aged 66.

George Washington Burns, Whitehall, Ill.; Eclectic Medical Institute, Cincinnati, 1878; member of the Illinois State Medical Society; veteran of the Civil War; died, November 14, from senility, aged 82.

Pierre Colon Morey (formerly Moriarty), Omaha; New York Homeopathic Medical College and Hospital, New York City, 1888; died, November 9, from miliary tuberculosis and peritonitis, aged 55.

Frank G. Wilson, Gastonia, N. C.; University of Maryland, Baltimore, 1896; member of the Medical Society of the State of North Carolina; died, November 13, from cerebral hemorrhage, aged 48.

Nathan Andrew Goddard, Milwaukee; University of Minnesota Medical School, Minneapolis, 1897; was found dead in his room in a hotel at Appleton, December 2, from heart disease, aged 46.

John Freeman Butler, Keene, N. H.; Medical School of Harvard University, Boston, 1854; practitioner for more than sixty-five years; surgeon in the Civil War; died, December 1, aged 91.

Francis D. Buck ✱ New York City; College of Physicians and Surgeons in the City of New York, 1876; member of the Medical Society of the County of New York; died, December 4, aged 71.

William Everett Sleet, Midway, Ky.; Medical College of Ohio, Cincinnati, 1889; member of the Kentucky State Medical Association; died, November 4, from arteriosclerosis; aged 62.

Thomas Jefferson Milner, Greenville, Texas; Louisville Medical College, Louisville, 1875; Confederate veteran; health officer of Hunt County; died, November 24, from pneumonia, aged 77.

Henry G. Linn, Rushville, Ind.; Pulte Medical College, Cincinnati, 1873; died, November 21, at the Central Indiana Hospital for the Insane, Indianapolis, from bronchopneumonia, aged 72.

Albert Alonzo Beacom, Kecksburg, Pa.; Western Pennsylvania Medical College, Pittsburgh, 1903; member of the Medical Society of the State of Pennsylvania; died, November 22, aged 46.

William E. McKivitt, Milwaukee; Barnes Medical College, St. Louis, 1899; member of the State Medical Society of Wisconsin; died, November 1, aged 58.

William D. Steele, Plymouth, Ind.; Indiana Medical College, Indianapolis, 1878; died suddenly, November 24, from heart disease, aged 87.

Jesse Glasco, Alton Pass, Ill. (license, Illinois, 1887); Civil War veteran; died, November 28, aged 81.

Andrew Cornelius Baxter, Elloree, S. C.; Physio-Medical Institute, Cincinnati, 1882; died, November 4, aged 60.

✱ Indicates "Fellow" of the American Medical Association.

Correspondence

"GROUP PRACTICE; DIAGNOSTIC AND PAY CLINICS"

To the Editor:—I have read with interest the correspondence on group practice and diagnostic and pay clinics. A diagnostic clinic as such should limit itself to cases referred by physicians. However, diagnostic clinics, whether pay or free, are still in an experimental stage, and I think it is somewhat too early to judge whether diagnostic clinics not giving any treatment can be successfully maintained. Observation of several such enterprises gives me conflicting impressions, although on the whole I am inclined to think that diagnostic clinics conducted on a nonprofit-making basis as community enterprises or as outgrowths of well organized hospitals are likely to be permanent features of medicinal practice in this country.

I do not believe, however, that a diagnostic clinic alone goes far enough to meet certain considerable needs of large sections of our population. I believe there is a distinct function for the clinic giving treatment, charging fees approximating the cost of service and paying salaries to its medical staff. The question of such pay clinics giving treatment must to my mind be approached from a double standpoint: first, that of the need of the public or of certain sections of the public, and, second, that of the interests of the medical profession.

From the first standpoint, the needs must be ascertained by an economic study of population, relating the economic facts to the amount of sickness and the cost of medical treatment. Investigations made from the medical standpoint alone do not enable us to reach conclusions on this matter. In New York City, studies of this kind have led me to the conclusion, as I recently stated in a paper before the Academy of Medicine, that about one million persons (out of a population of six million) fall ordinarily into the class requiring care in a charitable dispensary, charging nominal or no fees, a class which can as a rule afford to pay little or nothing for any medical service except in occasional emergencies when a physician is called into the home and paid something. Paid hospital care or systematic medical service at home or office is beyond the means of this group.

I estimate, further, that there are about two million persons who are able to pay for some medical service but cannot meet the expense of prolonged illness or of care by specialists, and who fall into what may be called the pay clinic class. For these persons the establishment of a diagnosis is not sufficient, because they cannot pay for adequate treatment unless the illness is so inconsequential as to require little attention after the diagnosis is established. It is because of the existence of this large class that I believe a pay clinic charging moderate fees and providing treatment (chiefly in the specialties) is needed by the public.

I am convinced that unless this class of service is provided by noncommercial organizations of a high grade, such as hospitals and other institutions maintained for public service, the public need is so great that commercial organizations, some under medical and some under merely business auspices, hiring cheap medical service, will be established.

From the standpoint of the interests of the medical profession, I believe that pay clinics properly conducted on a nonprofit-making basis as enterprises of the community or as outgrowths of well-organized hospitals will be a direct benefit to all physicians of good standing. The salaries paid in such pay clinics will turn over to the profession considerable sums which now do not reach the profession at all, being expended chiefly for medicines, appliances and quacks. Numbers of young men of good training will be enabled by such salaries to pursue clinical and scientific work without undue sacrifice while carrying on and developing their practice. Through pay clinics I believe that a very much larger proportion of the medical profession, both in large cities and in smaller places, will be able to give the time to work in clinics and to secure the benefits of the facilities of clinics, both as to laboratories and also in opportunities for co-working and consultation with fellow practitioners.

I feel strongly, as you do, that anything that tends to lower the standing of the profession or to reduce the average physician's income (which is low now, despite large incomes of a few) will be detrimental not only to the profession but also to the entire public.

I should feel it a great misfortune if the failure of the medical profession itself to move forward with sufficient rapidity and farsightedness to meet growing public demands due to changed economic and social conditions, and to changes in medicine itself, should cause the development of enterprises without proper medical support or supervision. It is essential to maintain the professional integrity of medical work and its guidance by professional men of dignity, disinterestedness and consecration to the splendid American medical tradition of public service.

MICHAEL M. DAVIS, JR., New York.
Executive Secretary, Committee on
Dispensary Development

To the Editor:—Apropos of the Cornell fee controversy, I should like to discuss the plan from the point of view of the general practitioner.

When I read the announcement in the Boston *American*, about the great throng that attended the clinic given by the Cornell professors, I was quite perturbed lest Boston should be called on to send her experts to help out the New York men, and thus leave Boston to the mercy of the common doctor.

It is pertinent to ask: From what source does Cornell expect to draw the material for this clinic? Is it from the patients of the general practitioner? If so, is it honest to advertise treatment by professors at a price under the general practitioner's charge? Is it honest for a hospital that has received vast sums of money for the purpose of treating the sick poor to use its plant to compete with the profession in the treatment of those who are able to pay?

The argument that the general practitioner cannot make a diagnosis without the aid of hospital apparatus has been disproved repeatedly. I do not question the fact that in obscure cases the roentgen ray, Wassermann test and bacteriologic examinations are of great service, but all these are open to the profession, most necessary tests being furnished free by the local boards of health.

There is a definite field for the outpatient department of our hospitals: namely, in the treatment of the sick poor. When all classes are treated, the poor are neglected and the others are pauperized.

It is very easy for the profession to bring these people, who seem to have no regard for the rights of the medical man, to their senses. In the long run, the hospital depends on the general practitioner to fill the wards. Let the doctor send his patients to a hospital that respects the doctor, and if he cannot find such a hospital, let him treat his patients at their homes.

CHARLES MALONE, M.D., Jamaica Plain, Mass.

THE VON PIRQUET STANDARD OF NORMAL BODY WEIGHT AS COMPARED WITH OTHER STANDARDS

To the Editor:—In THE JOURNAL, November 12, Dr. William E. Carter gives a valuable summary of the von Pirquet system of nutrition. I desire here to discuss merely one aspect of this paper, the "pelidisi chart" which von Pirquet has adopted in place of height-weight tables in estimating normal body weight.

The pelidisi is based on the second of the two formulas given by Dr. Carter, $\frac{\text{10 times the weight in grams}}{\sqrt[3]{\text{Sitting height in centimeters}}} = 100$ per cent. A portion of von Pirquet's original chart is reproduced in Table 1 of Dr. Carter's article. In the reproduction of the table, the percentage figures have been misplaced from above the spaces between the columns of weights to a position above the columns at the left of such spaces. Thus, the weights in the 100 per cent. column of Dr. Carter's Table 1 represent a 99.5 per cent. pelidisi; those in his 101 per cent. column represent a 100.5 per cent. pelidisi. Von Pirquet's purpose in calculating intermediate weights rather than weights coming out in even percentages is to make it possible to read off quickly for the weight of a given individual his nearest even pelidisi percentage. Thus, all weights coming between those given in the 100 and 101 per cent. columns of Dr. Carter's table have a pelidisi of 100 to within 0.5 per cent.

Because von Pirquet's chart is based on the equation given above instead of on the equation $\frac{\text{10 times the weight}}{\text{sitting height}^3} = 100$ per cent. the pelidisi percentages do not correspond with percentages of difference in weight. Thus, a person showing 95 per cent. on the "pelidisi" scale has not a weight 5 per cent. below the weight necessary to give 100 on that scale; he is about 15 per cent. "underweight." One showing 85 on the "pelidisi" scale is about 40 per cent. "underweight"; one showing 108 on the scale is about 25 per cent. over the pelidisi standard weight.

A great disadvantage of a "pelidisi" percentage, which varies with the cube root of the weight, compared with an index which varies directly as the weight, is that it encourages "jacking up" the normal standards, since differences in weight do not appear so great when thus expressed.

A healthy baby is plump; the child normally becomes slender as puberty is approached, and during adolescence he once more "fills out." Dublin has given evidence that the period showing the lowest mortality rate and probably also the lowest morbidity rate practically coincides with the period of greatest physiologic slenderness. This change of build during childhood, due mainly to a relatively rapid growth of the lower extremities and a relatively slow growth of the head, is expressed mathematically most simply by dividing the weight by the cube of the stature. The relative weight thus obtained is an index of bulk relative to stature and is usually lowest as puberty is approached or early in adolescence.

While the weight relative to the cube of stature thus decreases during childhood to a marked degree, the weight relative to cube of sitting height varies far less. This is due to the fact that rapid growth in relative weight of the lower extremities is largely compensated by a relatively slow growth of the head. The relatively constant relation between body weight and cube of sitting height led von Pirquet to select this relation as a standard in studying physical condition in relation to nutrition. By taking the cube root of ten times the body weight and dividing this by the sitting height, he obtained an index which approaches unity (100 per cent.) for healthy young infants. Unfortunately, we lack extensive statistical data on the sitting height of infants and young children. Such data as are available indicate that the relative sitting height during early infancy averages about two thirds of the stature. If it be taken as 66 per cent. of the stature, we find, according to the statistics on height and weight of infants and children recently compiled by Robert M. Woodbury for the Children's Bureau, that the pelidisi for infants with an average stature of 21 inches (53.3 cm.) irrespective of age, is 99.5 per cent. Infants from 1 to 2 months old, with an average stature of 57 cm., have an average pelidisi of 97.5 per cent.; those between 3 and 4 months old, with a stature of 61.4 cm., a pelidisi of 97.1 per cent.

Further investigation may prove that a 100 per cent. pelidisi is a fair standard for young infants. During childhood, however, the pelidisi decreases so that 100 per cent. ceases to be a fair standard of the normal. This is shown in the data compiled from Quetelet, Weissenberg and West by von Pirquet in his 1916 paper on this subject (*Zeitschrift für Kinderheilkunde* **14**). Quetelet's data show a decrease in pelidisi from 98.2 per cent. at 1 year to 90.9 per cent. at 10 years, and then an increase to 97.3 per cent. at 20 years and to 98.1 per cent. from 21 to 25 years. The data from Weissenberg and West show a decrease in the pelidisi from 95 to 96 per cent. at 5 years of age to about 94 at 11 years of age, and then an increase to 95 or 96 per cent. at 20 years of age. Furthermore, the data of West and Weissenberg include the weight of light clothing, which von Pirquet estimated to increase the body weight by about 3 per cent.

Of the more extensive American statistics on weight, height and sitting height of schoolchildren, those of Porter show slightly the highest weight relative to stature. To what extent this may be due to greater weight of clothing we have no means of determining. The weight of shoes appears, however, to be included. If we deduct for indoor clothing weights graded according to stature but corresponding fairly well with the weights found by Carter for the San Francisco children, we find that the "pelidisi" of the 15,686 boys and the 16,197 girls, the sitting heights and weights of whom are tabulated by Porter in age groups, runs for the boys at about 93 from 6 to 14 years of age, but increases to about 95 at from 15 to 18 years of age. For the girls it runs at about 94 to 95 up to 12 years of age; at 13 it jumps to 97, but then it again decreases to 95 at 14, 93 at from 15 to 16, and 94 at 18.

Carter says:

> In actual practice the pelidisi of a well nourished normal child is very close to 100 per cent. . . . Thin children run between 88 and 94 per cent. . . . Generally speaking, a child with a pelidisi between 95 and 100 per cent. may be said to be well nourished. An adult, however, with a pelidisi below 100 per cent. is undoubtedly undernourished. . . . In the American Relief Administration's feeding the line is drawn at 94 per cent. If food were plentiful, Pirquet would probably insist that the limit be raised to 98 or 100 per cent.

For the army, the standard accepted measurement for a man 68 inches tall was 141 pounds. Hitchcock gives the average sitting height for college students 173 cm. (68 1/10 inches) tall as about 90.8 cm. A 100 per cent. pelidisi for this sitting height is about 74.86 kg. (165 3/10 pounds). A weight of 141 pounds is equivalent to about 64 kg. For this the pelidisi is about 95 per cent. The college students tabulated by Hitchcock at this stature had an average weight of 62.1 kg., pelidisi 94. Male students entering the University of Wisconsin have a pelidisi of about 95 per cent. Neither the individuals coming up to the army standard nor the average college student may justly be said to be undernourished.

Sitting height, however, undoubtedly should be taken into account in establishing normal standards of height and weight with which to compare measurements of individuals. If the measurements of a large number of individuals are

arranged in groups centered about a given series of statures, such as a 50 inch stature group and a 51 inch stature group, or a 127 cm. group and a 129 cm. group, it is found that for a given stature group those individuals with a relatively large sitting height as a rule have a greater body weight than those with a relatively small sitting height. If the measurements are arranged according to sitting heights, those individuals at a given sitting height who have relatively long lower extremities are on the average heavier than those with relatively short legs.

For comparing the size of an individual with a standard, a table like von Pirquet's pelidisi table seems to have no advantage over tables based on average measurements in relation to stature and to sitting height. These averages may be of groups of the general population or of groups composed of individuals selected from the standpoint of physical fitness. On the whole, it appears best to base normal tables on averages of very large groups of the general population, and then to compare averages of selected groups with these.

For the period of infancy and childhood up to 6 years of age, we now have the data prepared by Robert M. Woodbury from several hundred thousand of the most carefully measured of the many hundreds of thousands of children examined in various parts of the country under the auspices of the Children's Bureau of the U. S. Department of Labor. These are arranged both under stature groups and age groups, and so as to show the average weight for a given stature at a given age. During infancy tall children of a given age group are relatively light, short children heavy as tested by dividing the weight by the cube of the stature. The relative weight varies inversely as the stature, so that for each age group the body weight divided by the stature forms an approximate constant for that group, according to the equation $\frac{W}{H^3} \times \frac{H}{1} = \frac{W}{H^2} =$ constant. This constant changes from one age group to the next. The $\frac{W}{H^2}$ ratio suggests that differences in stature within a given age group at this period are due largely to differences in relative length of the lower extremities.

Woodbury's data show that after the period of infancy is passed, weight is closely correlated to stature irrespective of age. For early childhood a table showing the average weight for a given stature for each sex suffices as a standard. The statistics compiled by Crum on infancy and early childhood form a valuable supplement to the Woodbury data. They show slightly higher average weights for a given stature, probably because based on measurements of infants and children at health "contests."

There are extensive data on the weight, stature and sitting height of American schoolchildren which may be utilized in compiling standard height-weight tables. The more extensive data have two drawbacks: The weights include clothing, and the averages are for age groups.

The first is the more serious, since few of those who have labored on the statistics of thousands of schoolchildren have taken the pains to make careful estimates of the influence of clothing on weight. Bowditch, the foremost of those who have engaged in collecting statistics of this kind, gave some data which show that for boys preceding puberty the clothes added more than 10 per cent. to body weight.

While it is more satisfactory in the study of relative weight to have statistics arranged according to stature groups rather than according to age groups, Woodbury's tables and a study of other data show that the average weight for a given stature group corresponds closely to the average weight for the average stature of that group. Thus, if at age 10 the average stature is 52 inches and the average weight is 59½ pounds, 59½ pounds is close to the average weight for children 52 inches tall. Similar relations are true for other measurements, such as sitting height.

Boas compiled and Burk published tables embodying the combined data of three of the largest statistical studies made on the height and weight of schoolchildren in this country: those of Bowditch in Boston, Peckham in Milwaukee, and Porter in St. Louis. These combined tables make at present the best data we have for compiling weight for height tables representing the normal based on averages of schoolchildren of the general population. Emerson has utilized them in his tables, but counts the weights as weight without shoes, whereas the original data were based on weight with shoes. This adds probably more than 2 per cent. to the average weight.

In addition to weight for height tables we should have weight for sitting height tables compiled in a similar manner. Smedley compiled some years ago satisfactory tables based on a study of Chicago schoolchildren, which show stature, sitting height and weight (without shoes) of age groups. These data may be readily utilized for stature group sitting height and weight tables, as may also those of Peckham in Milwaukee, Porter in St. Louis, McDonald in Washington, Boas in Worcester, Mass., and Toronto, Hastings in Omaha, and others. The chief difficulty in all these cases is, as stated above, to make a satisfactory allowance for weight of clothes. Prof. B. T. Baldwin of the University of Iowa has recently published a valuable study of physical growth of children in which American and foreign literature is extensively reviewed.

For the adolescent period and maturity, standard tables should be arranged by age groups subdivided into stature groups, since at these periods average weight is closely correlated both with stature and with age. In the latter part of adolescence and after full growth in stature has been reached within each age group, the relative weight, as in infancy, varies approximately inversely as the stature, so that again $\frac{W}{H^2}$ = an approximate constant. This constant increases from one age group to the next, and within a given age group does not hold true for the extremely tall or extremely short. For the adult, the medico-actuarial tables offer a good basis for standard tables; but their value is lessened by the necessity for making allowance for weight of clothes and for heels of shoes. For young adult males the recent army statistics, when published, will offer invaluable data. For college men and women a considerable number of valuable statistics on height-weight, sitting height and similar data have been published. The data on weights have the great advantage of being weights without clothes. The period for which at present it is most difficult to get satisfactory data is the interesting period of early adolescence. Data from private schools are as a rule based on a relatively limited number of individuals. The data published by Dublin on children from 14 to 16 years of age applying for work certificates in New York have the disadvantage not only of having the weight of clothing included, but also the height of the heels.

Standards based on measurements of large numbers of individuals will in the long run prove more satisfactory than "ideal" standards based on an accidental fact like the fact that the cube root of ten times the weight in grams divided by the sitting height in centimeters in infancy approximates unity.

The best basis for arranging the data is the stature group. For each stature group the average weight, average sitting height and such other data, like chest girth, as may seem of value, should be given. For the period of childhood the average age at which a given stature is reached should be

indicated. The value and interest of all these statistics is greatly increased if the standard deviation is given in connection with the average for each group. This indicates the limits of variation from the average within which a given individual has an even chance of being included. Note should also be made of physiologic variations. Thus, a schoolchild may be nearly an inch shorter at night than early in the morning, weighs more after than before a meal, and more when he goes to bed than when he rises. Racial types must also be considered. Naturally slender individuals are not unhealthy. Lack of attention to factors such as those mentioned has led to many wild statements concerning the extent of malnutrition among schoolchildren. It must always be remembered that about half of the total number of individuals will fall below any standard based on averages. More than half are likely to fall below the average weight of a group because the limit of thinness is so much more restricted than the limit of fatness. One can be more than twice as heavy as the average. There would not be much left of him if he varied as far in the other direction.

C. R. BARDEN, M.D., Madison, Wis.
Dean, University of Wisconsin Medical School.

LUNG ABSCESS FOLLOWING TONSILLECTOMY

To the Editor:—From Jan. 1, 1920, to Nov. 15, 1921, there were 569 tonsillectomies performed in our hospital. The great majority of these operations were done by one operator. These patients were all given ether anesthesia, the so-called forced method being used during the actual operation. The position was that of recumbency on the back. All tonsils were enucleated and not clipped, usually by combined dissection and the snare method. Four patients developed typical pulmonary abscesses: the clinical course, roentgen-ray findings, etc., showed marked involvement, which persisted for weeks, all the patients eventually recovering. One man was operated on in October, 1920, two in April, and one in March, 1921. Forced ether anesthesia is, apparently, insignificant, as the tube extends just inside the lips and does not even approach the pharynx, while the current which comes through is not sufficient to blow feathers about on the table. While there may be something to the factor of aspiration of débris, it seems to me that there is equal force and perhaps more logic to the metastatic theory, especially with our increased knowledge of the selective action of bacteria.

WILLIAM HOWARD LEWIS, M.D., Rome, Ga.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

TOXICITY OF AMYL ACETATE

To the Editor:—I have had a patient ask me the effects of banana oil fumes (amyl acetate in ether). This man works in an engraving and embossing shop, and the chemical is used as a binder for applying gold leaf. He has an asthma of undetermined cause and is anxious to know whether prolonged exposure to these fumes will work any subtile, permanent harm to him. I would appreciate any information you may give me on this subject.

DOUGLAS MACFARLAN, M.D., Philadelphia.

ANSWER.—The symptoms reported in the literature as due to poisoning by amyl acetate are suffocation, feeling of fulness of the blood vessels of the head, dizziness, severe headache and coughing. The drug is generally quick acting, and chronic symptoms, such as asthma, have not been noted. Salant has studied the toxicity of amyl acetate on various animals. In frogs, injection of amyl acetate in doses of from 4 to 6 c.c. per kilogram of body weight caused paralysis and coma in from fifteen to thirty minutes. In some cases these doses proved fatal, while larger doses invariably proved fatal. Five cubic centimeters given by mouth to rabbits weighing 1,500 gm. did not cause any symptoms except that death resulted in one instance within twenty-four hours. In dogs the intravenous administration caused a fall in blood pressure of 56 per cent. in twenty-five seconds, with marked slowing of the pulse. It is suggested that the sensitivity of this patient to amyl acetate be tested by the following method: A saturated, aqueous solution of the suspected solvent is prepared in sterile physiologic sodium chlorid solution. The skin of the forearm is scarified in such a manner as just to penetrate the outer layer, care being taken not to draw blood. A few drops of the solution are then rubbed into the tissue. A control with sterile salt solution should be made. If the patient is sensitive to the drug, a distinct urticarial wheal will appear around the site of the inoculation in from five minutes to half an hour. If no reaction occurs, the patient's asthmatic symptoms are probably not caused by amyl acetate, and the cause must be sought elsewhere, as, for example, in the various foods eaten.

USE OF SACCHARIN IN INFANT FEEDING

To the Editor:—Can an infant be given water sweetened with saccharin daily without detriment?

W. S. NORMAN, M.D., Hamburg, Ark.

ANSWER.—Virtually all experimental researches on the toxicology of saccharin have been done on adults and animals; no authoritative researches on infants are available. Saccharin is not a food but a chemical made from coal-tar derivatives. Weight for weight, it has 500 times the sweetening power of sugar.

Herter and Folin (Report 94, U. S. Dept. Agric., 1911) investigated the effect of administering saccharin to adults over a considerable period of time. Herter concluded that if more than 0.3 gm. (4½ grains) is taken daily for months, disturbances of digestion may be induced. A serious distaste for it often developed. The free hydrochloric acid was increased; the reaction of the feces changed from neutral to acid; there was no specific inhibitory influence on the digestive enzymes. He found strong evidence that part of the saccharin is absorbed and reexcreted into the lower bowel. Small doses were found to have no detrimental effect in adults. Folin administered from 0.15 to 1.75 gm. (2½ to 27 grains) of saccharin daily to twelve young adults for five months. He concluded that saccharin is a relatively harmless drug having no definite pharmacologic effects because of the negative character of his results. He states that it is not injurious to the health of normal, sound adults. Blodgett (*M. Rec.* **97**:521 [March 27] 1920) has given 5 grains (0.3 gm.) daily over a twenty year period and has observed no clinical ill effects. Burge (*M. Rec.* **94**:1071 [Dec. 21] 1918), after experimenting on rabbits, believes that saccharin serves to facilitate oxidation as well as acting as a sweetening agent. Several investigators believe that deleterious effects may result from saccharin administration. Ross (*Brit. M. J.* **2**:552, 1915) reports a recent research at the McFadden Laboratory of the Lister Institute showing that saccharin is a powerful auxetic (stimulates cell proliferation). Heitler (*Wien. med. Wchnschr.* **70**:1029, 1920) states that saccharin has a depressive action on the cardiovascular system just opposite to sugar. Sugar enhances the heart action, strengthens the pulse, decreases cardiac dulness and increases the blood pressure, and the heart tones are more pronounced. Saccharin weakens the pulse, increases the heart dulness, and lowers the blood pressure. He states that saccharin should not be given to persons with weak hearts or heart disease. Grundfest (*Zentralbl. f. inn. Med.* **42**:234, 1921) reports a case of idiosyncrasy to saccharin in an adult, and has occasionally seen patients who complained of anorexia and headache when taking saccharin. In administering saccharin to infants, the safety of the infant depends on: (1) amount given; (2) duration of administration, and (3) extent to which it is used to replace the needed carbohydrates.

It may be stated on the basis of available evidence that saccharin can be administered daily in minimum quantities to most infants without danger of causing detrimental results. Exceptionally, infants have an idiosyncrasy resulting in poisoning. The greatest danger in its continued use is the probability that it may be used to replace needed disaccharids, as it has no food value. The safer method of administering sweetened water would be to use sucrose or lactose, reserving saccharin for cases of fermentative diarrhea and the rarer instances of glycosuria.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALABAMA: Montgomery, Jan. 10. Chairman, Dr. Samuel W. Welch, Montgomery.

ARIZONA: Phoenix, Jan. 3-4. Sec., Dr. Ancil Martin, 207 Goodrich Bldg., Phoenix.

DISTRICT OF COLUMBIA: Washington, Jan. 10. Sec., Dr. Edgar P. Copeland, 1315 Rhode Island Ave., Washington.

HAWAII: Honolulu, Jan. 9. Sec., Dr. G. C. Milnor, 401 Beretania St., Honolulu.

INDIANA: Indianapolis, Jan. 10. Sec., Dr. Wm. T. Gott, Crawfordsville.

MINNESOTA: Minneapolis, Jan. 3-5. Sec., Dr. Thomas S. McDavitt, 539 Lowry Bldg., St. Paul.

NEW MEXICO: Santa Fe, Jan. 9-10. Sec., Dr. R. E. McBride, Las Cruces.

NEW YORK: Albany, Buffalo, Syracuse and New York City, Jan. 23-26. Asst., Professional Examinations, Mr. Herbert J. Hamilton, State Education Bldg., Albany.

NORTH DAKOTA: Grand Forks, Jan. 3. Sec., G. M. Williamson, 860 Belmont Ave., Grand Forks.

OKLAHOMA: Oklahoma City, Jan. 10-11. Sec., Dr. J. M. Byrum, Shawnee.

OREGON: Portland, Jan. 3. Sec., Dr. U. C. Coe, Stevens Bldg., Portland.

PENNSYLVANIA: Philadelphia, Jan. 3-9. Sec., Mr. Thomas E. Finnegan, State Capitol, Harrisburg.

PORTO RICO: San Juan, Jan. 3. Sec., Dr. M. Quevedo Baez, Box 804, San Juan.

RHODE ISLAND: Providence, Jan. 5-6. Sec., Dr. Byron U. Richards, State House, Providence.

SOUTH DAKOTA: Pierre, Jan. 17. Director, Dr. H. R. Kenaston, Bonsteel.

UTAH: Salt Lake City, Jan. 3. Director, Mr. J. T. Hammond, Capitol Bldg., Salt Lake City.

WASHINGTON: Olympia, Jan. 10. Director, Mr. Fred J. Dibble, Olympia.

WEST VIRGINIA: Charleston, Jan. 10. Sec., Dr. W. T. Henshaw, Charleston.

WISCONSIN: Madison, Jan. 10-12. Sec., Dr. John M. Dodd, 220 E. Second St., Ashland.

A METHOD FOR INCREASING EFFICIENCY WITHIN THE HOSPITAL

FRANKLIN R. NUZUM, M.D.
Medical Director, Santa Barbara Cottage Hospital
SANTA BARBARA, CALIF.

Outside the hospital, many agencies have developed whose aim is the uplift of medicine. But within the hospital there is no special agency or department whose chief duty is the elevation of the plane of medicine practiced in that institution. If hospitals are to keep pace with the demand for better medicine, they must assume responsibility for the patient's progress. They must also assume responsibility for the four functions long attributed to them, namely: (1) the care of the sick; (2) the education of future personnel; (3) research and medical science, and (4) serving the community as the center of all health promotion activities.[1]

Up to the present, comparatively few hospitals have made special efforts toward assuming these duties or becoming more than mere nursing institutions. One way in which this plan may be accomplished is here suggested.

There should be established within the hospital an agency whose chief duty is the prosecution of a never ending campaign for better medicine in that institution. For this work the full-time service of a medical man should be procured, who, for want of a better name, may be called the "medical director." His first duty is the organization of laboratories. With these well equipped and manned, he then calls the attention of the visiting staff to the benefit that may accrue to the patient from the proper use of the laboratory facilities.

He effects the proper staff organization with the various subgroups. He brings before them regularly the various medical and surgical problems that arise in the institution. He keeps in touch with the especially ill patients in the house, and with those in whose cases it is difficult to arrive at a diagnosis. He discusses the situation with the attending man, offers suggestions if possible, and advises further consultation, if indicated. The accomplishment of a smoothly functioning staff with team play developed to a high degree, with its members aiding one another by suggestion and example to obtain from the laboratories and other equipment all the help possible in diagnosis and treatment, would stand out in sharp contrast to the manner in which physicians practice in most hospitals at the present time. The cooperation and spirit of helpfulness which it is possible to establish among members of a staff, especially when one man, such as a medical director, makes it his business to effect such harmony, results in a creation of a postgraduate school in that institution.

Such a staff would eliminate the competitive element of present day medicine within the hospital.[2] In its place would be substituted the newer ideals of specialization, team play, and thorough, intensive study of individual patients. These ideals are spreading rapidly throughout the country because better service is rendered the public. Such a hospital will gain the confidence of the community and serve as an educational institution in that community—the thing most needed to combat the propaganda of state medicine, social insurance and the numerous quacks.

Another of the difficult problems of the day is that of effecting a plan whereby the newer procedures in the practice of medicine may be taken up more quickly by the practitioner of medicine. Even after an excellent procedure has been worked out in the experimental laboratory, and its application to clinical medicine has been definitely established, there is a lapse of a long period of time, usually of years, before it is adopted by the profession at large. Here is another opportunity afforded the medical director. He has established a library in the hospital and, through a journal club or some similar agency, the literature in a large group of journals is abstracted and discussed at regular intervals by the staff. He suggests that certain of the newer procedures be tried. He provides the equipment, and trains a technician if necessary. The method, thus tested, will soon demonstrate its worth. If it is of no value, it can easily be dropped. If it is of value, that group will profit by its use over a period of several years before they would otherwise have become familiar with it.

The advancement of research and medical science, the third field of endeavor of the medical hospital, has a value so well recognized that it calls for no discussion here. Since most hospitals have not recognized their opportunity in the field of research, they have made no provision for such persons on their staff. This, again, would come under the scope of the medical director.

Two difficulties come to mind in putting into operation this plan of medical director. The first is in selecting the proper man for the position. The success of the undertaking is intimately associated with the character of the man who shall act in such a position. Naturally he must be well trained, broad minded, sympathetic and cooperative, if he is desirous of making the plan a success. A narrow minded, selfish man, be he ever so well qualified personally, would make a failure of the undertaking.

The aim of the medical director is one of help and of services to help the hospital provide adequate equipment for all diagnosis and treatment; to help the individual physician in making use of the equipment for the good of the patient; to help the staff by promoting a spirit of team work among them. In such a position a man has an unlimited field.

The second difficulty attendant on adding a new agent to the hospital staff is the financial question. Two means of

1. Warner, A. R.: Medical Care Is Measure of Hospital's Real Service, Mod. Hosp. **16**: 325 (April) 1921.

2. Mayo, W. J.: The Medical Profession and the Public, J. A. M. A. **76**: 921 (April 2) 1921.

financing such a department merit attention. In one instance the fees collected from the laboratory, after the laboratory was reorganized and the attention of the staff had been called to the importance of routine laboratory tests, very nearly bore the expense of the new undertaking. A second method lies in interesting some philanthropic individual who will personally meet the added expense.

CONCLUSION

Hospitals should represent the best in medicine and surgery. Outside the hospital, specialization, group practice and health centers[3] are becoming popular because they are an advance in the demand for better medical practice. In order to be progressive, hospitals must meet new conditions as they arise. The time is at hand when a patient entering a hospital should have an assurance that he will receive careful study and adequate treatment. This cannot be done under the regimen of a nursing hospital. It means that hospitals must become medical institutions and that there must be in their organization the same elements of team play and cooperation among the various specialists and men on the staff that obtains in group medicine outside the hospital.

FIRST NATIONAL BOARD EXAMINATION UNDER NEW PLAN

The first examination by the National Board of Medical Examiners under the recently adopted new plan[1] will be held as written examinations in Class A medical schools as follows: Part I, February 15, 16 and 17, inclusive; Part II, February 20 and 21, inclusive. Part I will consist of an examination in anatomy, including histology and embryology; physiology; physiologic chemistry; general pathology; bacteriology; materia medica, and pharmacology. Part II will consist of an examination in medicine, including pediatrics, neuropsychiatry and therapeutics; surgery, including applied anatomy, surgical pathology and surgical specialties; obstetrics and gynecology; public health, including hygiene and medical jurisprudence. The board announces that, because of prevailing industrial and financial conditions, reductions in the fee schedule are established as follows: For candidates whose applications are received before June 1, 1922, fees for Parts I and II, $10 each in addition to the registration fee of $5, provided the examination in Part I is taken before Sept. 1, 1923; in case of an "incomplete" examination of Part I or II, approved by the board before Sept. 1, 1923, the original fee for the part shall cover the examinations necessary to complete the part if taken within one year; candidates registering before June 1, 1922, will be admitted to the examination in Part III, when eligible, on payment of $25 for the examination in Part III, in case of such partial payment the certificate of the board being withheld until balance is paid; until Sept. 1, 1923, a candidate entitled to a reexamination in the subjects of Part I or II not involving the whole part will be permitted a reexamination in one subject without extra charge, and the fee for each additional subject will be $5; if a candidate is entitled to a reexamination in the whole of Part I or II, fee for such reexamination shall be the same as originally charged. Application blanks and circulars of information may be had by writing to the secretary, Dr. J. S. Rodman, 1310 Medical Arts Building, Philadelphia.

3. Billings, Frank: The Future of Private Medical Practice, J. A. M. A. **76**: 349 (Feb. 5) 1921.

1. The National Board of Medical Examiners, J. A. M. A. **77**: 881 (Sept. 10) 1921.

Efficient Hospital Service.—Good hospital service depends upon brains and effort, brains to develop, organize, and direct the required professional skill and constant effort expended to keep all the hospital working efficiently, and to keep informed at all times as to what efficient work is. A proportional amount of brains and effort should come from the trustees and the superintendent, and it is unfortunate when the medical staff has to do every one else's work as well as its own.—A. R. Warner, *Mod. Hosp.* **17**:177 (Sept.) 1921.

Book Notices

INFLUENZA. An Epidemiologic Study. By Warren T. Vaughan, M.D. The American Journal of Hygiene Monographic Series No. 1. Paper. Price, $3.25. Pp. 260. Baltimore: American Journal of Hygiene, 1921.

This is a readable, rather extensive treatise including a general epidemiologic survey of influenza as well as a report of the writer's own investigations. Much interesting descriptive material, together with a number of instructive tables and charts, has been brought together. A limited bibliography is appended. Not all the important aspects of the influenza problem, however, have been covered, and some of the topics dealt with are not treated in a throughly critical fashion. Many readers will find the general summary of others' investigations more valuable than the author's own contributions to epidemiologic knowledge. The sickness survey which he made in Boston in 1920, covering approximately 10,000 individuals, led to results substantially the same as those obtained by Frost and other workers. The different sex incidence observed, showing a high attack rate in females, agrees with that observed by Frost. So, too, with respect to immunity, the author arrives at the same results as those reached by Frost and others, and concludes that "a previous attack, contracted on an average of from ten to seventeen months before, conferred no protection whatever against a second attack." One somewhat confusing feature of the report is due to the lack of clear separation between the writer's own work and the results of previous investigators. On the whole, however, the treatise will be very useful to students of influenza. There are a number of misspellings of proper names, and, unfortunately, a number of authors cited in the text are given no corresponding reference in the bibliography. An interesting and attractive feature of the monograph is the writer's willingness to inject his own views—in many cases stimulating and instructive—into the discussion.

THE PSYCHOLOGY OF EVERYDAY LIFE. By James Drever, M.A., B.Sc., D.Phil., Combe Lecturer on Psychology in the University of Edinburgh. Cloth. Price, $2.50 net. Pp. 164. New York: E. P. Dutton & Company, 1921.

Several books on the psychology of everyday life are already available, including the practical book by Swift and the psychanalytic book by Freud and Brill. The present text is more psychologic and less popular than Swift's book, and less medical than Freud's. It is written in a clear, easy, readable style although somewhat advanced over elementary books on psychology. Of particular interest is the chapter on "Remembering and Forgetting," the author accepting Freud's view that slips of the tongue or pen, or slight mistakes of carrying out intended actions, mislaying of objects, and a host of other small errors are symptomatic of interference directly or indirectly on the part of submerged complexes. A final chapter deals with spiritistic phenomena, which the author regards as forms of disassociation pure and simple, and highly improbable. A valuable bibliography of the hundred best books in psychology for the general reader is appended.

MISSSTÄNDE IM ARZNEIMITTELWESEN UND VORSCHLÄGE ZU IHRER BEKÄMPFUNG. Von Dr. Emil Reiss, Privatdozent an der Universität Frankfurt a. M. Paper. Price, 6 marks. Pp. 40. Berlin: Julius Springer, 1921.

Wanted, in Germany: an institute for the examination of new remedies like the one now in existence in North America (the Council on Pharmacy and Chemistry). That is the chief theme of this phamphlet, aimed at the correction of abuses connected with the overproduction of pharmaceuticals. We may spare ourselves the description of these abuses, as they are identical with those that prevailed in this country prior to the organization of the Council, and which unfortunately still continue to exist, though in somewhat less obnoxious and dangerous form. The evil effects of these on the medical profession, the pharmacists, the manufacturers and the public are systematically discussed in turn. The "Institut für Arzneimittelprüfung" should be, in the author's opinion, established by the government; but, owing to the impossibility of accomplishing this in Germany for a long time to come in

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view of present financial and political conditions, Reiss welcomes the inauguration of such an institute on private initiative by a committee of the Deutsche Gesellschaft für innere Medizin in connection with the Pharmacologic Institute of Berlin. He suggests the advisability of having two such institutions in the country, so that a manufacturer dissatisfied with the decision of one might appeal to the other. Another remedy proposed by the author is an abrogation or modification of the trade-mark law so that the almost perpetual monopoly that can be enjoyed by any one for the mere exercise of his imagination would be abolished. The present law directly encourages, and makes profitable, frauds of all kinds, as that of introducing substances as new by the mere coining of a new name for them, while it does not even protect the consumer as regards the identity of a product. The owner of a trade-mark may change the product as he pleases, as is known to have occurred in a number of instances. If, on the other hand, the patent law—which in Germany merely protects the process—should be found insufficient protection to an inventor of a new remedy to make investigation worth while, the law might be changed to cover the substance itself (as we have it in this country). Another remedy advocated is improvement in the teaching of prescription writing. Since the introduction of the biologic method in the teaching of pharmacology, prescription writing has become a lost art, and this has encouraged the development of the deplorable excrescences of the pharmaceutic industry of today. If the teacher of pharmacology is purely a theorist, who merely knows the action of drugs upon animals, he should associate with himself a clinical man who can make the subject of prescription writing interesting and profitable to the student. Even though, thanks to the Council on Pharmacy and Chemistry, we are much farther along in this country in the correction of the abuses under discussion, the pamphlet contains a number of suggestions well worthy of attention.

BENIGN STUPORS. A Study of a New Manic-Depressive Reaction Type. By August Hoch, M.D. Cloth. Price, $2.50. Pp. 284. New York: The Macmillan Company, 1921.

This posthumous monograph, edited by Dr. John T. McCurdy, contains an excellent description and an intelligent analysis of this syndrome of mental medicine. The stupors are defensory actions; one may say that they are the result of choice by the individual. There is but one way to give a mental history correctly: in diary form and in extenso. There are 100 odd pages of fine print devoted to case histories. The cardinal symptoms of the stupor reaction are paucity of affect, inactivity, negativism and catalepsy. These symptoms can be shown in most cases to be due to ideas of death. The discussion on diagnosis shows the same high plane of assurance as it would if typhoid or syphilis, instead of intangible mental states, were the subjects. There is a concise summary of the stupor reactions, and the book closes with a short discussion of the literature.

A MANUAL OF SURGICAL ANATOMY. By Charles R. Whittaker, F.R.C.S., F.R.S.E., Senior Demonstrator of Anatomy, Surgeons' Hall, Edinburgh. Third edition. Cloth. Price, $3.50. Pp. 429, with 90 illustrations. New York: William Wood & Co., 1921.

This volume contains material prepared and used in the author's lectures to students. The surgical anatomy of the various regions of the body is discussed according to a definitely outlined plan. Each region is described and the surgical possibilities pointed out in such a way as to visualize them and to hold the attention of the reader. This application in instances may be open to criticism, although the anatomic descriptions show a thorough preparation in that subject. In stating that the free communication between the lymphatics of the pancreas and bile ducts explains why chronic pancreatitis is often a sequel of cholecystitis and cholangeitis, the author is assuming as proved only one of several theories of origin, and that one not generally accepted. The old nomenclature is used with a few exceptions. In certain instances the old is used in one place and the new later. Since the Basle anatomic nomenclature has been set as a standard and is being taught in the best medical schools, the old nomenclature should be discontinued. The diagrams and illustrations are nearly all original and are inserted where most needed. A table of the ossification centers of the epiphyses of the bones, with a brief discussion, is given; unfortunately, the date of beginning ossification is not entered. This knowledge must be available in the interpretation of roentgenograms, and the table should be completed. The volume gives the student that clinical application so necessary for visualizing anatomic details and remembering them from dissections and studies of exhaustive textbooks. To the practitioner it offers a much-needed review of surgical anatomy that will not overburden his time and will hold his interest by taking him back from his clinical experience to the anatomic details.

TASCHENBUCH DER ÖKONOMISCHEN U. RATIONELLEN REZEPTUR. Von A. Frölich, Prof. für Pharmakologie, und R. Wasicky, Prof. für Pharmakognosie. Paper. Pp. 215. Berlin: Urban & Schwarzenberg, 1921.

The deplorable financial condition of the masses of central Europe is reflected by this booklet, which aims to suggest to the physician ways by which he can greatly reduce the expense of medicaments to his patients. Thus, to save the almost prohibitive price of glassware, the physician is advised to prescribe powders instead of solutions, and to have the patient prepare the solution at home. This frequently has other advantages. Ordering tannic acid in powder form and having it dissolved by the patient, as required, overcomes the disadvantage of instability of the tannic acid solution, which has so great a tendency to become moldy. Some of the other rules formulated are: Have the patient prepare his own infusions and decoctions of mildly acting vegetable drugs by writing for "species." Prefer tablets to pills, powders and mixtures. When prescribing in solution, use aqua fontana instead of aqua destillata whenever expedient. Order ammoniacal rather than alcoholic liniments. Use domestic instead of imported drugs. Avoid as much as possible the prescribing of specialties and of trade-mark chemicals. In the "special part," the various therapeutic classes of drugs are briefly reviewed, and the least expensive means of securing drug effects are pointed out. In prescribing for the poor, whom we have with us even in this land of plenty, some of the principles pointed out might well be applied.

Miscellany

PLUMBING INSPECTION

THE JOURNAL has often commented on the inconsistency of the claims advanced for "sanitary plumbing" as an agency in preventing the dissemination of disease. For reasons that are easily understood, money can often be raised more readily for purposes of health protection than for some other purposes. There are consequently frequent attempts made to utilize interest in disease prevention as a means for expenditure which might otherwise meet opposition. A recent movement in this direction is seen in the endeavor of plumbers to assume the title of "Sanitary Engineer."

The whole case has been admirably presented in a recent article in the *Engineering News Record* (87:195, 1921):

"According to a law affecting all cities in New York State, plumbing inspection is included in the duties of the local health authorities. With our present conceptions of public health work, such an idea seems highly fantastic, for the effects of faulty drainage in causing disease are known to be very small indeed. Whatever the original idea, the plumbing codes now generally in effect have but the slightest connection with the activities of a public health unit as now carried on. The plumbing code of Rochester, like the building code, concerns only questions of materials, workmanship and type of fixtures. A plumbing inspector does not attempt to decide whether conditions are sanitary or not. He simply sees that the plumbing system is of an accepted kind, of proper materials and properly installed. This done, he goes away and forgets it until informed that it has broken down in some particular. Then he makes sure, as before, that the necessary repairs are made

in a workmanlike manner. The plumbing inspector requires that a stack be of a given size; the building inspector makes sure that rooms have the floor and window area considered necessary to the health of the occupants. One is as much concerned with the public health as the other. Both are concerned with original construction only, and both should be in the Bureau of Buildings, which has the control of original construction for its object, not in the Bureau of Health, which is charged with the correction of unhealthy conditions.

"It furthermore is not good management to put an inspection service concerned only with materials and workmanship under the inspection of a man trained in medical matters, whose attention is almost wholly taken up with fighting disease. It has resulted, in the case under discussion, in almost complete separation and independence of the inspection service.

"The municipal health bureau is an organization whose purpose is the prevention and control of disease. Its annual appropriations almost always are inadequate, and it is unfair to that body and misleading to the taxpayers to support out of these appropriations, ostensibly for protection of public health, an inspection service concerned with protection of property values far more than with the prevention of disease. This practice is quite general in American cities, and seems to be a survival of the older public policy which puts property interests above human life or health. It is a neat and successful scheme for protecting property values with money the uninformed citizen naturally believes is being spent in controlling disease."

THE UNITED STATES PHARMACOPEIA

Many Deletions from the Tenth Revision

The chairman of the committee on revision of the United States Pharmacopeial Convention has made public a report which includes the following statement:

The Subcommittee on Scope recommends that the following articles official in the U. S. P. IX be not admitted to the U. S. P. X:

Acidum Gallicum
Acidum Hydrobromicum Dilutum
Acidum Hydrocyanicum Dilutum
Acidum Hypophosphorosum Dilutum
Acidum Nitrohydrochloricum
Acidum Nitrohydrochloricum Dilutum
Aethylis Carbamas
Alumini Hydroxidum
Ammonii Iodidum
Ammonii Salicylas
Ammonii Valeras
Amygdala Dulcis
Anisum
Aqua Rosae
Aqua Aurantii Florum
Argenti Oxidum
Arnica
Aspidosperma
Auri et Sodii Chloridum
Bismuthi Betanaphtholis
Bismuthi et Ammonii Citras
Bismuthi Subsalicylas
Bromoformum
Caffeina Citrata
Caffeina Citrata Effervescens
Calcii Glycerophosphas
Calcii Hypophosphis
Calcii Sulphidum Crudum
Camphora Monobromata
Cerii Oxalas
Chondrus
Cimicifuga
Cinchoninae Sulphas
Copaiba
Coriandrum
Diacetylmorphina
Diacetylmorphinae Hydrochloridum
Diastasum
Ferri et Quinae Citras
Fluidextractum Sarsaparillae Compositum
Foeniculum
Frangula
Guaiacum
Guarana
Humulus
Hydrargyri Oxidum Rubrum
Hydrastina
Hydrastininae Hydrochloridum
Lactucarium
Liquor Sodii Arsenatis
Lithii Bromidus
Lithii Carbonas
Lithii Citras
Maltum
Mangani Dioxidum Praecipitatum
Matricaria
Mezereum
Morphina
Moschus
Oleoresina Petroselini
Oleoresina Pineris
Oleoresina Zingiberis
Oleum Cubebae
Oleum Pimentae
Oleum Thymi
Petroselinum
Physostigma
Pilocarpus
Piper
Potassii Hypophosphis
Pyrethrum
Quininae Salicylas
Sabal
Sanguinaria
Sarsaparilla
Sassafras
Sinapis Alba
Sodii Arsenas
Sodii Arsenas Exsiccatus
Sodii Glycerophosphas
Sodii Hypophosphis
Sodii Perboras
Sodii Phenolsulphonas
Sparteinae Sulphas
Spigelia
Staphisagria
Strontii Bromidum
Strontii Iodidum
Strychnina
Sumbul
Syrupus Calcii Lactophosphatis
Syrupus Hypophosphitum
Syrupus Sarsaparillae Compositus
Taraxacum
Triticum
Uranii Nitras
Veratrina
Viburnum Prunifolium
Xanthoxylum
Zinci Carbonas Praecipitatus
Zinci Phenolsulphonas
Zinci Valeras

Medicolegal

Note to Be Paid by Medical Examinations

(Dobbs et al. v. Johnson (Texas), 230 S. W. R. 1035)

The Court of Civil Appeals of Texas says that the plaintiffs were the agents for a life insurance company. The defendant was a physician whom they had had appointed medical examiner for the company, and who admitted receiving $485 in examinations. He took out a policy in the company for $10,000 life insurance, and for the premium gave the plaintiffs his note for $285. The note at its close provided: "To be paid by medical examinations." When they sued on the note, it contained credits amounting to $85. The evidence showed that not enough examinations were made during the first six months after the note was executed to pay it off, and the defendant contended that failure to give him enough examinations in the six months, at the end of which the note became due, automatically discharged his liability on the note. Judgment was rendered that the plaintiffs take nothing by their suit, and that the note be canceled and annulled; but that judgment is reversed by the court of civil appeals, which renders one in favor of the plaintiffs. The court holds that the defendant should be estopped to deny his liability. He obtained full value for the note, and he should not be allowed to profit at the expense of the payees of the note. Where a party to a contract has received and retained the benefits of a substantial performance thereof by the other party, he cannot rescind the contract, but it must be carried out. There was no basis in the evidence on which to found a cancellation of the note. There was no pretense of fraud, accident or mistake, but the cancellation was based on a claim of payment because enough examinations were not furnished the defendant to pay off the note. This could form the basis of no suit, except one for damages, and these were neither alleged nor proved. The consideration for the note was fully paid in the issuance of the $10,000 policy, and the defendant could not escape payment of the premium after having enjoyed the benefit of the insurance for more than a year. The partial breach of contract, if such breach occurred, would not form the basis for a rescission of the contract, but might justify a suit for damages. In this case, however, the defendant continued the contract after he said it was breached, and such waiver would have the effect of doing away with the effects of a breach.

A Childbirth Case—Error in Referring to Pus

(Schnetzky v. Zanto (Wis.), 182 N. W. R. 751)

The Supreme Court of Wisconsin says that, March 5, 1919, while attending the defendant, the plaintiff was employed to take care of the defendant's wife, who was delivered of a child on the same evening. For several days thereafter the plaintiff attended both husband and wife. According to his testimony, he detected symptoms of pneumonia in the wife, March 9, and on the 10th began a course of treatment for such disease, and continued it until the 13th, and treated her for no other ailment during that time. At the defendant's request, on the 11th another physician was called in consultation, who thereafter testified that Mrs. Zanto was suffering from a critical stage of pneumonia; that he made a manual examination of, and found there was no trouble with, the uterus. March 13, the plaintiff was discharged, and a Dr. Berwick was called. When the plaintiff sued the defendant for the medical services which he had rendered to the defendant and his wife, the defendant counterclaimed for damages on account of the plaintiff's alleged negligence in treating Mrs. Zanto. A number of physicians were called by each side as experts. Dr. Berwick testified that at his first visit he found the defendant's wife suffering from septic, or blood poisoning, with a very high temperature caused by such condition; that the source of such trouble was in the uterus; that the condition of the uterus at that time was such that it was dangerous to attempt to clean it out. That at such time, March 13, Mrs. Zanto had no pneumonia, and there

were present no indications that she had recently been so afflicted; that four days afterward the witness flushed and cleared out the uterus; that in the strongly odorous fluid discharge that came at that time, in quantity approximately a pint, he found a portion of the placenta about the size of a pigeon's egg; that the critical condition in which he found Mrs. Zanto was the direct and probable result of the failure to remove such portion of the placenta. He also testified that at the time of such discharge from the uterus there was no pus. Nor was there any testimony in the record which tended to qualify or contradict this statement as to the absence of pus in the discharge. Nevertheless, a hypothetic question was put to one of the medical experts in which was included the finding of such a piece of placenta eleven days after the birth of the child; that the womb gave away blood and pus in amount equal to half a pint; and a temperature that rose from 104 to 106 during the period of five to seventeen days after the birth. Moreover, the existence of pus was made a part of the hypothetic questions by the defendant's counsel in his examination of all the medical experts save one. The plaintiff testified that he did examine the afterbirth and found that it was intact. He was corroborated on both of these points by the midwife in attendance, and as to the fact that he did make some examination of it by the defendant. The trial resulted in a verdict and judgment for the defendant. That judgment is reversed, and the cause remanded for a new trial, because, although Dr. Berwick testified directly that there was no pus in the discharge some eleven days after the birth of the child and in which was found, as he claimed, an overlooked portion of the placenta, yet it was quite apparent that, through a mistake which could easily arise in the trial of such a lawsuit, the court and counsel on both sides seemed to have assumed that there was testimony which would warrant the including as an important feature of the hypothetic question asked of the medical witnesses the existence of pus in such discharge. A consideration of the entire testimony satisfies the supreme court that the reiterated inclusion of and emphasis on this element of pus as being present in the discharge must have influenced the jury in a substantial degree in arriving at the verdict which it rendered. The supreme court is also convinced that the error was of such a nature that it must be declared to have caused a substantial prejudicial error, for which the plaintiff should be granted the relief of a new trial.

Due Process of Law Denied by Vasectomy Statute

(Williams et al. v. Smith (Ind.), 131 N. E. R. 2)

The Supreme Court of Indiana, in affirming a judgment in favor of plaintiff Smith, holds that the trial court was correct in enjoining the defendants from performing, or causing to be performed, the operation of vasectomy on him. The supreme court says that the plaintiff was a prisoner in the Indiana Reformatory, and that the chief physician, board of managers, and two chosen surgeons were proposing to act pursuant to the Indiana statute of 1907, which provides that:

> It shall be compulsory for each and every institution in the state, intrusted with the care of confirmed criminals, idiots, rapists and imbeciles, to appoint on its staff, in addition to the regular institutional physician, two skilled surgeons of recognized ability, whose duty it shall be, in conjunction with the chief surgeon of the institution, to examine the mental and physical condition of such inmates as are recommended by the institutional physician and board of managers. If, in the judgment of this committee of experts and the board of managers, procreation is inadvisable and there is no probability of improvement of the mental condition of the inmate, it shall be lawful for the surgeons to perform such operation for the prevention of procreation as shall be decided safest and best. But this operation shall not be performed except in cases that have been pronounced unimprovable.

Wholly aside from the proposition of cruel and unusual punishment, and infliction of pains and penalties by the legislative body through an administrative board, it is very plain that this act is in violation of the fourteenth amendment to the federal constitution in that it denied the plaintiff due process of law. He had no opportunity to cross-examine the experts empowered to decide that this operation should be performed on him. He had no chance to bring experts to show that it should not be performed; nor had he a chance to controvert the scientific question that he was of a class designated in the statute.

Society Proceedings

COMING MEETINGS

American Association of Anatomists, New Haven, Conn., Dec. 28-30.
American Physiological Society, New Haven, Conn., Dec. 28-30.
Am. Soc. for Pharm. and Exper. Therap., New Haven, Conn., Dec. 28-30.
Society of American Bacteriologists, Philadelphia, Dec. 27-29.

SOUTHERN MEDICAL ASSOCIATION

Fifteenth Annual Meeting, held at Hot Springs, Ark., Nov. 14-17, 1921

The President, DR. JERE L. CROOK, Jackson, Tenn., in the Chair

Early Diagnosis and Treatment of Joint Tuberculosis

DR. JOHN T. O'FERRALL, New Orleans: Sufficient care is not taken in making a diagnosis in the average case of early joint tuberculosis. Not only local treatment but also rigid and long continued constitutional treatment is required, for tuberculous joints over a period not less than two years, especially as regards weight bearing. The promiscuous opening of tuberculous abscesses and haphazard curetting of sinuses is extremely bad surgery. The end-result striven for should not be ankylosis, but a functioning joint.

Roentgen-Ray Study of the Lumbosacral Spine

DR. ARCHER O'REILLY, St. Louis: Abnormalities and variations in the lumbosacral region are very common. In some cases, however, variations in a minor degree are due to distortions, as a result of the position of the patient when the roentgenogram is made. Variations of the lumbosacral spine are not confined to patients with back symptoms, but are also seen in about 50 per cent. of the cases in which back symptoms were absent. It is probable that in these cases the spine is inherently weak, and that eventually backache or strain may develop. Irregularity at the lumbosacral articulation is very common, not only in persons suffering from backache, but also in those who have never had back symptoms, so that the surgeon, in cases of injury, must be very guarded in stating that there has been displacement or fracture as a result of the accident.

Operative Treatment of Certain Fractures (Femur, Humerus and Forearm)

DR. EDWIN W. RYERSON, Chicago: Whitman's method is simple and is followed by a high percentage of good results. It can rightfully be called an operative method, because it involves the actual reduction of the fracture, usually under an anesthetic. The technic should be perfectly understood by general practitioners, for they are the men who take care of most fractured hips. This method is applicable to the great majority of cases of fracture through the neck of the femur (intracapsular type), no matter how old or how fat the patient may be. The union may not be absolutely accurate from an anatomic point of view, but it is almost certain to be excellent from a functional standpoint. Very few fractures will require open operation if they have had competent mechanical treatment, but few communities at present are provided with the requisite appliances and materials for the proper treatment of many of the common and disabling forms of fracture.

Essentials of Successful Leadership for Public Work on a County Basis

DR. S. W. WELCH, Montgomery, Ala.: The primary requirement for successful leadership for public health work on a county basis is native ability to deal with people, supplemented by a medical education and an understanding of the operation of law in human conduct, particularly with relation to rural psychology. A detailed and comprehensive knowledge of scientific phases of the health field seems less essential to the health officer in the early beginnings of health organization than ability to anticipate popular needs and harmonize divergent interests. The extent to which effective supervision by the state board of health may con-

tribute to an uninterrupted yield of results in county health work and to the continued individual growth of professional personnel is dependent on a set of conditions in which problems of organization and administration are inextricably interwoven.

Control of Typhoid in Rural Communities

DR. ALECK P. HARRISON, Austin, Texas: There is a constant source of infection in rural districts, the open-back privy, the open, unprotected wells, the unscreened houses being the chief sources of danger. Typhoid may be controlled and eradicated by educating the people, building sanitary privies, using pumps instead of open wells, screening the houses, properly treating patients and protecting all water, food and milk supplies and, lastly, by rendering a large proportion of the population immune by vaccination.

Soil Pollution, a Public Health Problem of Today

DR. E. L. BISHOP, Nashville, Tenn.: In the selection of a type of privy for community installation in rural districts, attention should be given to two general factors: 1. The soil formation and ground water level. The vertical distance between an area of pollution and ground water is the important one; the horizontal distance is of relatively little importance, except in the case of limestone fissures and other natural or artificial openings. 2. Ability to secure community application of the type selected, taking into account the accessibility of materials, the economic status of the community to be served, and individual willingness to buy the degree of protection decided on.

Fish as an Antimosquito Agency

DR. J. A. LEPRINCE, Memphis, Tenn.: Each county health officer in the malaria belt should make it his business to see that a fish hatchery is established at the county seat, where those who come into town on Saturday afternoons can and will notice it. In some towns a concrete tank can be placed in the court house square, gambusia installed therein, and the attention of the public invited to it by an appropriate sign. Also, owners of permanent stock ponds generally allow us to use their property as hatcheries. In many counties there are permanent ponds near well traveled good roads. These ponds can easily be stocked at small expense, and large signs used to tell the rural public that the county health officer can supply them with gambusia. In many cases the women's clubs, chambers of commerce or similar bodies will gladly help to finance the making and installing of this large advertising sign. If correctly planned, mosquito control measures can be made to be a lever for other classes of rural sanitation that are not yet so readily measured by the public eye. The county superintendents of schools can be interested, and jars of fish kept in each school. Final school examination papers can contain a question or two about gambusia. There should be properly labeled exhibits of gambusia at every county agricultural fair. This exhibit could be used to induce farmers to breed this fish in their stock ponds.

The More Common Causes of Chronic Urinary Obstruction in Male Children

DR. W. A. FRONTZ, Baltimore: Congenital valves of the posterior urethra and spina bifida are the most frequent causes of chronic urinary retention in children. As the internal vesical sphincter and prostatic urethra are frequently widely dilated in both conditions, developmental defects of the lumbar and sacral spine should always be eliminated. The treatment of obstruction from congenital urethral valves is most satisfactory if instituted before the development of serious lesions of the upper urinary tract.

Spina Bifida with Associated Diverticulum of Bladder (Urachus) and Pyonephrosis

DR. JOSEPH H. SMITH, Memphis, Tenn.: My case presented: failure to close of the third, fourth and fifth neural arches of the third, fourth and fifth lumbar vertebrae; some contraction and distortion of the pelvic bones; curvature of the spine over this region; supernumerary or accessory first lumbar rib; meningocele over the sacrolumbar region; marked trabeculation of the bladder in its entirety; distorted left ureteral orifice and orifice of diverticulum (urachus). The diverticulum extended far up into the right hypogastrium; the contents were approximately 500 c.c.; it formed a large fluctuating tumor when distended. There was also a pyonephrosis of the left kidney, a large pelvis with abrupt termination of the distention downward of the thorium shadow.

Problem of Chronic Infection of Prostate

DR. ABRAHAM NELKEN, New Orleans: It is my opinion that the prostate is involved in 85 per cent. of all cases of gonorrheal urethritis and in about 50 per cent. of all cases of nonspecific infection of the urethra.

Postoperative Care in Surgical Conditions of the Kidney

DR. H. W. E. WALTHER, New Orleans: The immediate after-care of the patient as relates to shock deserves careful attention. Keeping the patient quiet, warm, away from drafts, guarding against pain by hypodermic administration of morphin sulphate, pantopon, papaverin or the oral administration of some anodyne, and establishing diuresis by giving water freely either by mouth, by hypodermoclysis, by proctoclysis or by infusion will do much toward restoring the patient. Hemorrhage at operation, which cannot be arrested by hemostatic forceps and ligature, is best controlled by packing. Whether the guaze pack employed should be dry or saturated with one of the thromboplastin preparations still remains a mooted question.

Glucose Tolerance Test in the Obese

DR. JAMES E. PAULLIN, Atlanta, Ga.: We selected for this study twenty-six cases, all showing from 10 to 80 per cent. overweight. Before accepting them we determined as nearly as we could that the kidneys showed no essential damage which would influence the character of the reaction. We detected at least five prediabetics, and two of the five have definitely developed diabetes. The test is of great value in stressing the importance of dietary therapy in these cases.

Food Allegry as a Cause of Abdominal Pain

DR. W. W. DUKE, Kansas City, Mo.: The gastro-intestinal mucosa may become hypersensitive to an article of food with the result that the patient experiences severe abdominal pain, often associated with nausea and vomiting, whenever he eats the food to which he is sensitive. The symptoms of food allergy may simulate somewhat those of a surgical lesion in the abdomen, and an error in diagnosis can be made unless this condition is kept in mind.

Rationale of Digestive Therapy

DR. ERNEST H. GAITHER, Baltimore: Our most encouraging results have been obtained by the use of various combinations of iron, arsenic and strychnin, given in the hypodermic form. My personal experience is not sufficient to venture an opinion as to the efficacy of the intravenous method of drug application. Postoperative digestive cases call for the exercise of the greatest discretion and closest attention, but, as a class, they are the most neglected with which we have to deal. In the hands of certain investigators, lavage of the duodenum and drainage of the gallbladder by the newer methods seem to have been productive of good results, but their value in digestive therapy has not been conclusively established as yet. In true digestive neurosis, when an absence of organic change is proved the best results are obtained by prescribing a well regulated, properly balanced general diet, and psychotherapy with hygienic, dietetic and medicinal principles applied symptomatically.

Newer Methods in the Treatment of Diabetes

DR. ELLIOTT P. JOSLIN, Boston: Improvement in the care of patients with diabetes will come from physicians having them in their own hands. If the duration of diabetes accidentally discovered by insurance companies is twelve years, it lies in the power of every practitioner not only to duplicate their results for similar age periods, but to surpass them. The physician should detect diabetes, not by accident but by design. Thereby treatment can be begun at a still earlier stage.

(To be continued)

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Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Obstetrics and Gynecology, St. Louis

November, 1921, **2**, No. 5

*Development of Hymen. F. J. Taussig, St. Louis.—p. 471.
Hemorrhage from Nonpregnant Uterus in Absence of Neoplasm. W. A. Scott, Toronto, Ont.—p. 479.
Ovulation and Menstruation as Postoperative Considerations. T. J. Watkins, Chicago.—p. 489.
Radical Conservatism in Surgical Treatment of Chronic Adnexal Disease. F. C. Holden, New York.—p. 493.
*Disposition of Uterus Following Salpingectomy Where It Is Desirable to Preserve Menstruation. C. Culbertson, Chicago.—p. 497.
Torsion of Uterine Adnexa Occurring Before Puberty; Torsion of Normal Adnexa. Report of Case; Review of Literature Since 1900. R. R. Smith and W. J. Butler, Grand Rapids, Mich.—p. 507.
Management of Abortion from Study of 530 Consecutive Cases. O. A. Gordon, New York.—p. 521.

Development of Hymen.—Picturing a vagina that lies nearer the surface than in lower animals Taussig says the squatting posture must have given rise to contamination with insects and irritating substances from the ground unless Nature had taken some means to offer protection. The usual conception of the labial folds is that they have such a protecting function and it does not seem unreasonable to suppose that the hymen similarly and in a more direct manner served to keep out foreign material from the vagina. Particularly during the first years of life before the labia and their hairy covering are fully developed would such a hymeneal fold serve a definite purpose. According to this view, then, the hymen dates back to the time when the progenitors of the human race squatted on the ground.

Fundectomy After Salpingectomy to Preserve Menstrual Function.—Culbertson maintains that the reduction of the uterus in size by removal of its entire fundus is a ready method of disposing of the organ after salpingectomy when, particularly in young women, it is desirable to preserve menstruation. Fundectomy becomes a logical procedure not only in operating for the cure of infectious processes, but also for simple sterilization, for ectopic pregnancy, ovarian cystomata and like conditions. Its only contraindication from a technical point of view is that of procidentia uteri.

American Journal of Ophthalmology, Chicago

November, 1921, **4**, No. 11

Disciform Keratitis. W. C. Bane and W. M. Bane, Denver.—p. 801.
Late Traumatic Detachment of Retina. Its Prophylaxis and Importance from Disability Compensation Standpoint. H. Gifford, Omaha.—p. 803.
Tenotomy and Looping for Surgical Correction of Strabismus. F. O. Schwartz, St. Louis.—p. 806.
Retinal Angiosclerosis. L. A. Copps, Marshfield, Wis.—p. 810.
Eye Findings in Brain Injuries. N. M. Black, Milwaukee.—p. 819.
Causes and Prevention of Blindness. N. B. Harman, London.—p. 824.
Neighborhood Signs in Pituitary Tumor. J. J. Keegan, Omaha.—p. 835.
Extraction of Senile Cataract. C. A. Veasey, Spokane, Wash.—p. 846.
Microphthalmia with Encephalocele. H. I. Begle, Detroit.—p. 850.
Ophthalmic Herpes Zoster. H. G. Thomas, Oakland, Calif.—p. 853.
Eye Complications of Variola. J. C. Decker, Sioux City, Ia.—p. 854.
Toxic Amblyopia from Alcohol and Copenhagen Snuff. E. J. Brown, Minneapolis.—p. 854.
Paralsis of Convergence; Report of Cases. J. P. Israel, New York.—p. 856.

American Journal of Public Health, Chicago

November, 1921, **11**, No. 11

Use of Centrifuges for Dewatering Sludge. T. C. Hatton.—p. 958.
*Results of Recently Passed Ordinance Requiring Physical Examination of All Persons Connected with Food Handling in Restaurants, Bakeries, Grocery Stores, Etc. L. B. Gloyne, Kansas City, Kan.—p. 963.
Abstract of Report of Committee on Accuracy of Certified Causes of Death.—p. 966.
Need for Special Health Protection of Employed Adolescents. H. H. Mitchell.—p. 973.
Smallpox Incidence and Measures of Control in American and Canadian Cities, 1919 and 1920. L. K. Frankel.—p. 979.
Public Health Program of League of Women Voters. V. H. Parker.—p. 992.
National Child Health Council. C. Dinwiddie.—p. 995.
Coordination of Public Health Activities. P. K. Brown, San Francisco.—p. 999.
Sacramento Water Supply. J. R. Snyder.—p. 1004.

Results of Physical Examination of Food Handlers.—Up to the present time, 1,860 persons have been examined by the Kansas City Department of Health and Sanitation. Two hundred and forty-nine have been examined by a family physician. One hundred and twelve persons either left town or quit work as soon as the department started to enforce the ordinance. The vast majority of those who left town and quit work did so because they felt sure that they could not pass the examination. From the results of the examinations it would appear that the hotel and restaurant workers have a greater liability to venereal infection. Another point stressed is that all of the persons examined by family physicians were reported to be in perfect health. The chief service rendered by the ordinance has been the locating of a large number of infectious venereal diseases.

Archives of Dermatology and Syphilology, Chicago

December, 1921, **4**, No. 6

*Treatment of Early Syphilis. C. M. Smith, Boston.—p. 723.
*Therapeutic Action of Silver Arsphenamin. J. A. Fordyce, New York.—p. 737.
*Rare Form of Suppurating and Cicatrizing Disease of Scalp. F. Wise and H. J. Parkhurst, New York.—p. 750.
*Bowen Type of Epithelioma. L. B. Mount, Albany, N. Y.—p. 769.
*Treatment of Late Syphilis, and of Syphilis in Mother and Child. J. H. Stokes, Rochester, Minn.—p. 778.
*Crude Coal Tar in Dermatology. C. J. White, Boston.—p. 796.
Parapsoriasis. E. D. Chipman, San Francisco.—p. 807.
*Herpes Zoster as Primary Ascending Neuritis. D. W. Montgomery, San Francisco.—p. 812.

Treatment of Early Syphilis.—The minimum of treatment for a case of primary or early secondary syphilis in Smith's opinion should consist of: (1) mercurial dressings to initial lesions; (2) intravenous arsphenamin, 0.1 gm. to 40 pounds body weight, repeated in from three to five days, and then at five day or weekly intervals until six to ten injections have been given; (3) full doses of mercury, preferably by intramuscular injection; if an insoluble salt, fifteen injections should constitute the first course, and (4) frequent examinations of the urine. Following the mercurial injections, an interval of five or six weeks should elapse before checking up with the Wassermann test. If it is positive, the first courses should be repeated. If negative, a vacation of three months is allowed, at the end of which time ten or twelve mercurial injections and from four to six of arsphenamin are given. With a second negative Wassermann reaction, during the following six months from six to eight mercurial injections are given, and during the next year the patient should receive short courses of mercury. An examination of the cerebrospinal fluid should be made early in the disease if possible and certainly before the patient is discharged. Patients with organic disease who acquire syphilis are to be treated with the same or greater consideration than patients showing the same sort of damaged organs of syphilitic origin.

Therapeutic Action of Silver Arsphenamin.—Fordyce reports on 168 cases of syphilis in which he used silver arsphenamin. The cases were distributed as follows: Primary syphilis, four cases; beginning secondary syphilis, ten cases; secondary syphilis with a four-plus Wassermann reaction, thirteen cases; secondary syphilis with eruption and a four-plus Wassermann reaction, thirty-five cases; latent syphilis, twenty-seven cases; tertiary syphilis, nine cases with gummas; neurosyphilis, fifty-six cases. The chief objection to the use of silver arsphenamin is the fear of producing an argyria. To date, more than a million doses of the drug have been given on the continent and about 125,000 doses in this country, and no authentic cases of argyrism have been reported. Fordyce regards silver arsphenamin as being a valuable addition to our remedies for syphilis because of its greater freedom from reactions. It is as efficacious as the older remedies in causing cutaneous lesions to disappear, and in certain early cases it was, perhaps, more rapid in its action. The patients in whom negative reactions have been obtained have not as yet had a spinal fluid examination. Positive statements, therefore, cannot be made as to what the percentage of cures will

be ultimately. While some of the continental physicians are giving as high as 0.5 or 0.6 gm. at a dose, until more is known about the drug Fordyce does not favor making the maximum dose at the present time greater than 0.3 gm.

Suppurating and Cicatrizing Disease of Scalp.—Wise and Parkhurst report a case of perifolliculitis capitis abscedens et suffodiens. The disease is a rare one, only three examples being reported in the literature. The clinical appearances in these three cases are almost exactly alike. In its active stages, before atrophy and scarring have taken place, the disease picture differs markedly from that of any other atrophying and destructive disease of the scalp. In its end stages, after complete involution has occurred, the affected areas resemble those seen in folliculitis decalvans, pseudopelade and other similar conditions.

Bowen Type of Epithelioma.—Mount summarizes briefly eleven cases recorded in the literature and cites one personal case.

Treatment of Syphilis.—Only that mode of approach, Stokes says, will leave a significant impress on our future knowledge which envisages the entire disease, employs one or two methods in a large series of cases over a period of many years, records the results, and which, by lifelong observation and periodic complete reexamination, detects impending serious pathologic change, and evaluates in detail and with accuracy the response of parasite and host.

Crude Coal Tar in Skin Diseases.—White is impressed with the efficacy of crude coal tar in certain skin diseases. He uses 5 per cent. incorporated in zinc paste. His formula is as follows: Crue coal tar, 2; zinc oxid, 2; cornstarch, 16; petrolatum, 16. Mix thoroughly the cornstarch and the petrolatum; second, rub together the coal tar and the zinc oxid; third, combine the first product with the second. This method produces a nearly black, perfectly smooth paste, which smells strongly of coal gas and tar. These two injunctions are absolutely essential to success. Proper methods of application and removal of this paste are to be observed. Always cut all involved hair short when possible. Never bandage crude coal tar, pustulation is the result if this injunction is disobeyed. Smear on a medium coating of the paste with a wooden throat stick, and cover over the part with one thickness of old cotton or linen. Thin white cotton gloves may be advantageously substituted when we are treating the feet and ankles; and the footless legs of white cotton stockings may be drawn over the arms or legs of the patient. All of these dressings must be washed and boiled every twenty-four hours. The same crude coal tar should never be allowed to remain on the human skin for more than twelve hours. Every vestige of the previous application must be removed before making the next dressing, and this may be accomplished by means of sterilized gauze, soaked in the oil of sweet almonds or in olive oil.

Herpes Zoster a Primary Ascending Neuritis.—Montgomery believes that the zoster eruption is due to a trophic disturbance following inflammation of a posterior root ganglion, and that this ganglionitis is due to a specific virus, possibly one of the streptococci, which attains the ganglion by way of the skin and the peripheral nerves.

Archives of Neurology and Psychiatry, Chicago

December, 1921, **6**, No. 6

*Some Theoretical and Some Practical Aspects of Psychanalysis. C. K. Mills, Philadelphia.—p. 595.
*Critique of Psychanalysis. M. Prince, Boston.—p. 610.
*Anatomic Seat of Emotions: A Discussion of James-Lange Theory. C. L. Dana, New York.—p. 634.
Frontal Lobe Pneumonia as Observed in Cyst in Left Frontal Lobe; Marked Remission of Symptoms; Decompression After Thirteen Months; Necropsy. G. A. Moleen, Denver.—p. 640.
Histopathology of Porencephalus. J. H. Globus, New York.—p. 652.
*Artificial Pneumorachis in Treatment of Acute Infections of Meninges. Preliminary Report. E. A. Sharp, Buffalo, N. Y.—p. 669.
Syndrome of Visuopsychic Cortical Area—Based on Stabile Hallucinations and Defective Visual Association in Sane Person. H. H. Hoppe, Cincinnati.—p. 674.

Psychanalysis Waning.—Mills believes psychanalysis, especially the freudian or sexual variety, is tending toward the discard and in another generation will have lost its hold on the profession and the community.

Criticisim of Psychanalysis.—Prince maintains that the great majority and general body of freudian doctrines reached by this method of free-association have not only been confirmed by other and more exact methods of research, but have also been contradicted by the results so reached. The failure of the psychanalytic method is due to the fact that the findings require and depend on too elaborate, intricate, and, however ingenious, debatable interpretations, which themselves depend on debatable theoretical mechanisms and forces, and the method itself is not only inexact and inadequate but open to artefacts of the most subtle kind, particularly in the selection of the data. The conception of the subconscious and the theoretical structure built upon it approaches more nearly a philosophy than a science.

Seat of Emotions.—Dana inclines to the opinion that the James-Lange theory of emotion is true only in part; that is, that the peripheral visceral stimuli are only later and contributing factors to emotion, and that the skeletal muscles and sympathetic system do not play an essential part. He believes that emotion is centrally located and results from the action and interaction of the cortex and thalamus. The bodily sensations which accompany emotion are produced by stimuli from the automatic centers in the brain-stem (acting on heart, blood vessels and glands), but they only cooperate to extend and perhaps intensify the emotion.

Artificial Pneumorachis.—Of sixty-four patients treated by artificial pneumorachis (intraspinal injection of air or oxygen) by Sharp, twenty-eight have died. In the meningococcus meningitis cases only the severe and apparently unfavorable cases were treated by this method. The mortality of 23 per cent. compares very favorably with the statistics of all cases of meningococcus infection in which the antimeningococcus serum is used alone. The mechanical effect of the gas in opening secluded pockets of infection has undoubtedly prevented relapses as none of the patients who have recovered have had a recurrence such as occasionally occurrs in other cases. The average amount of oxygen injected has been from 10 to 15 c.c. The technic employed is the ordinary procedure of lumbar puncture with the patient lying on the side. After removal of as much fluid as will flow through the needle, the oxygen is injected by means of a 20 c.c. Luer syringe. The oxygen is injected slowly, using from 5 to 10 c.c. as measured on the syringe. Removal of the syringe allows the gas and fluid to escape in a frothy mixture. Injection of the gas is repeated and the head and shoulders slightly elevated to allow the gas to reach the cerebral ventricles. This results in additional fluid escaping when the syringe is removed.

Archies of Ophthalmology, New Rochelle, N. Y.

November, 1921, **20**, No. 6

Treatment of Cataract. H. Smith, London, Eng.—p. 515.
Episcleritis; New Method of Approach. H. L. Sinskey, M. B. Levin and B. Sacks, Baltimore.—p. 526.
Case of Keloid of Cornea. H. D. Lamb, St. Louis.—p. 535.
Lipemia Retinalis. W. F. Hardy, St. Louis.—p. 543.
Action of Mydriatics and Miotics; Their Effects in Hypertension (Glaucoma). C. Koller, New York.—p. 550.
Action of Epinephrin on Glaucomatous Eye. A. Knapp, New York.—p. 556.
Character of Iritis Caused by Focal Infection. W. L. Benedict, Rochester, Minn.—p. 560.
Case of Intermittent Exophthalmos. W. G. M. Byers, Montreal, Can.—p. 569.

Arkansas Medical Society Journal, Little Rock

November, 1921, **17**, No. 6

Nonsurgical Treatment of Surgical Tuberculosis. J. D. Southard, Fort Smith.—p. 115.
Skin Lesions of Syphilis. L. Thompson, Hot Springs National Park.—p. 117.

Journal of Experimental Medicine, Baltimore

December, 1921, **34**, No. 6

*Studies on Treatment of Human Trypanosomiasis with Tryparsamid (Sodium Salt of N-Phenylglycineamid-*p*-Arsonic Acid). L. Pearce, New York.—p. 1.

Tryparsamid in Trypanosomiasis.—This study of the action of tryparsamid in human trypanosomiasis concludes a series of chemical and biologic investigations in a particular problem of chemotherapy and thus represents the final step in a

logical method of approach to such a problem. It has been shown that tryparsamid, the sodium salt of N-phenylglycine-amide-*p*-arsonic acid, possesses a marked trypanocidal activity in human trypanosomiasis caused by *Tr. gambiense*. Single doses of from 0.5 to 5.0 gm. produced a peripheral sterilization of lymph glands and blood in an average of from six to twelve hours. The duration of the peripheral sterilization following single doses of 17 to 83 mg. per kilogram ranged from seventeen to fifty-eight days in patients who ultimately showed a return of trypanosomes to the peripheral blood. In a number of patients, however, treated with single doses of 9 to 68 mg. per kilogram, no such relapse was detected during an observation period of from forty to 111 days. The drug is extremely soluble in water and may be administered intramuscularly as well as intravenously. The immediate trypanocidal action after intramuscular administration was as rapid as that following the intravenous route while the duration of peripheral sterilization was appreciably longer. Relatively few repeated doses produced in advanced cases a marked and rapid diminution of the cells of the spinal fluid and were associated with definite improvement of mental and nervous symptoms. The occurrence of visual disturbances in certain advanced cases was the only untoward effect detected during the course of the work, and was apparently related to a too frequent administration of the drug. The condition was transitory in the majority of instances and resumption of treatment was not followed by a recurrence of this symptom. The general beneficial effect of the drug was a noticeable feature of its action in both early and advanced cases as shown by the disappearance of subjective symptoms, by the return of the pulse and temperature to normal limits, by the pronounced improvement of the blood picture, and by well marked gains in weight.

Journal of General Physiology, Baltimore

November, 1921, **4**, No. 2

Nature of Foveal Dark Adaptation. S. Hecht, Woods Hole, Mass.—p. 113.
Selective Absorption of Potassium by Animal Cells. II. Cause of Potassium Selection as Indicated by Absorption of Rubidium and Cesium. P. H. Mitchell, J. W. Wilson and R. E. Stanton, Providence, R. I.—p. 141.
Relation of Respiration to Rhythm in Cardiac Ganglion of Limulus Polyphemus. W. E. Garrey, New Orleans.—p. 149.
*Comparative Studies on Respiration. XIX. Preliminary Stage in Progress of Ether Anesthesia. E. P. Smith, Cambridge, Mass.—p. 157.
Stereotropic Orientation of Tube Feet of Starfish (Asterias) and Its Inhibition by Light. A. R. Moore, New Brunswick, N. J.—p. 163.
Comparative Studies on Respiration. XX. Cause of Partial Recovery. O. L. Inman, Cambridge, Mass.—p. 171.
Effect of Hydrogen Ion Concentration on Production of Carbon Dioxid by Bacillus butyricus and Bacillus subtilis. M. M. Brooks, Washington, D. C.—p. 177.
Influence of Electrolytes on Solution and Precipitation of Casein and Gelatin. J. Loeb and R. F. Loeb, New York.—p. 187.
Origin of Potential Differences Responsible for Anomalous Osmosis. J. Loeb, New York.—p. 213.

Effect of Ether on Respiration.—Using concentrations of ether (1, 3.65 and 7.3 per cent.), Smith noted that the first effect of ether is to cause a depression in the rate of respiration. This is followed by a rapid rise above normal, which in turn is succeeded by a fall. With all these concentrations the respiration is ultimately reduced to approximately the same level; the stronger the ether, the less time required to produce this result. Even when the respiration has been reduced below normal, recovery is possible on removal from the ether, and appears to be complete, if sufficient time is allowed. If, however, the rate has been too far depressed, no recovery is possible.

Journal of Immunology, Baltimore

September, 1921, **6**, No. 5

Identity of Antibodies. H. Zinsser, New York.—p. 289.
*Studies on Acute Respiratory Infections. VIII. Cultural and Serologic Relationship of Hemolytic Streptococci Isolated from Inflammatory Conditions of Respiratory Tract. E. Valentine and L. Mishulow, New York.—p. 301.
Id. IX. Differences in Character of Hemolytic Action of Streptococci and Relative Value of Various Methods in Demonstrating These Differences. L. Mishulow, New York.—p. 329.
Id. X. Nature and Value of So-Called Precipitin Reaction as Applied to Serologic Grouping of Streptococci. C. Krumwiede and E. Valentine, New York.—p. 343.
Conglutination Phenomenon. F. Maltaner and E. Johnson, Albany, N. Y.—p. 349.
Complementing Activity of Blood Serum with Relation to Suprarenal Deficiency. E. E. Ecker and J. M. Rogoff, Cleveland, Ohio.—p. 355.
*Hereditary Blood Qualities. Medico-Legal Application of Human Blood Grouping. R. Ottenberg, New York City.—p. 363.

Relationship of Hemolytic Streptococci in Respiratory Tract.—A study made by Valentine and Mishulow of the streptococci of the hemolytic group obtained from inflammations or the respiratory tract shows that these strains fall into many cultural groups and subgroups. A serological study showed so few similarities that the probability of a dominant strain seemed remote. There was no correlation between the grouping and the type of disease. These observations and the relative infrequence of streptococci of the hemolytic group in inflammations of the respiratory tract seem to justify the conclusion that none of the strains isolated were of primary etiologic importance.

Hereditary Blood Qualities.—The work done by von Dungern and Hirschfeld and others on the agglutinogens A and B of red cells is the basis of Ottenberg's paper. The results of these investigations are applied to the question of disputed paternity. If the child's blood is the correct group for the alleged parents, then the child could be their offspring, not that it must of necessity be. But, on the other hand, if the child's group is wrong for the two asserted parents, then one can say with absolute certainty that the child must have a parent other than one of those asserted. The same evidence can be used, either to prove the illegitimacy of the offspring or (circumstances being reversed) to prove the innocence of a correspondent asserted to be the father of a given child. In infants and very young children the test can only be relied on if it shows definite group characteristics, which it does in the majority of cases. The test can be easily done with a few drops of blood obtained from a painless prick with a small needle. Considering this, and the importance of the questions often at issue, it seems as though some legal means could be devised by which the persons concerned could be compelled to allow the examination at the hands of a representative of the court.

Journal of Industrial Hygiene, Boston

November, 1921, **3**, No. 7

When Are Disabilities of Back Arising Out of Pathologic Conditions Reportable Accidents? R. B. Crain and B. J. Slater, Rochester, N. Y.—p. 197.
Picric Acid in Industrial Surgery. A. G. Bolduc, Bayonne, N. J.—p. 202.
Suggestions for Cuspidors in Industrial Plants. H. F. Smyth.—p. 204.
Spray Infection. S. R. Douglas and L. Hill, London.—p. 206.
Carbon Monoxid Illuminating Gas, and Benzol: Their Effect on Blood Coagulation Time. H. S. Forbes and L. Hompe.—p. 213.

Journal of Urology, Baltimore

July, 1921, **6**, No. 1

*Squamous Cell Carcinoma of Bladder. F. Hinman and T. E. Gibson, San Francisco.—p. 1.
Value of Preparation in Kidney Operations. H. G. Bugbee, New York.—p. 51.
Vaginovesical and Uterovesical Fistulae. D. W. MacKenzie, Montreal.—p. 61.
Postoperative Care of Vesicovaginal Fistulae. A. L. Chute, Boston.—p. 77.
Changes in Blood Concentration in Experimental Nephritis. F. P. Underhill and B. Greenhouse, New Haven.—p. 83.
New Advance in Silver Therapy (Colloidal Silver Chlorid). R. B. Cobb, Chicago.—p. 91.

Squamous Cell Carcinoma of Bladder.—Hinman and Gibson present the results of a study of heterotopic epidermization, with a review of the literature and report of cases. Only ninety cases have been collected. The etiology of these neoplasms has been variously ascribed to (1) an ascending epidermization, (2) an ectodermal embryonal inclusion in the vesical wall, (3) a carcinomatous degeneration of preexisting leukoplakia, and (4) leukoplakia malignant in character from the beginning. It seems that no single theory will explain the etiology of these neoplasms in every case. Definite proof in support of these theories appears to be lacking except in those few cases where the growth appears to be the result of malignant degeneration of preexisting leuko-

plakia. Squamous cell carcinoma appears to be the most malignant form of vesical carcinoma. There are two types; the tubular type (epithelioma pavimenteux tubulée) or non-cornifying epithelioma, and the lobular type (epithelioma pavimenteux lobuleé ou corné) or cornifying epithelioma. The former is said to be more common type. The latter is generally a malignant ulcer resembling those seen on cutaneous surfaces. Metastases are uncommon, having been reported in only three cases. The cause of death in most cases is attributed to one or more of the following factors: infection, hydronephrosis, and cachexia. Symptoms are not characteristic. The most common prodromal symptom is hematuria. Treatment has been palliative in many cases, and the reports of the operative treatment are too incomplete to determine with certainty the results.

Maine Medical Association Journal, Portland

November, 1921, **12**, No. 4

Obstetric Problems from Standpoint of General Practitioner. F. W. Mann, Houlton.—p. 95.
Diagnosis of Tuberculosis. E. O. Otis.—p. 106.
Cancer Control. J. C. A. Gerster, New York.—p. 110.

Neurological Bulletin, New York

August, 1921, **3**, No. 8

Meningovascular Neurosyphilis. F. Tilney, New York.—p. 271.

New Orleans Medical and Surgical Journal

November, 1921, **74**, No. 5

Tribute to Dr. Pierre Rouanet, Discoverer of Cause of Heart Sounds, at One Time Practitioner in New Orleans. E. Souchon.—p. 314.
Clinico-Philosophic Interpretation of Immuno-Therapy. G. H. Sherman, Detroit.—p. 317.
Diagnostic and Therapeutic Value of Lumbar Puncture in Lethargic Encephalitis. G. H. Hauser, New Orleans.—p. 331.
Eczematoid Dermatitis Due to Ringworm Fungus. R. Hopkins, New Orleans.—p. 336.
Plea for More Careful Examination as Means Leading to More Accurate Diagnosis. J. E. Knighton, Shreveport.—p. 340.
Bronchiectasis. G. S. Bel, New Orleans.—p. 345.
Municipal Refuse Collection and Disposal. H. R. Crohurst, Washington, D. C.—p. 354.
Situs Inversus Viscerum Totalis. L. J. Williams, Baton Rouge.—p. 362.
Cancer Prophylaxis. J. C. Willis, Shreveport.—p. 367.
Some Fractures of Base Treated by Repeated Spinal Punctures. L. B. Crawford, Patterson.—p. 374.
Case of Tetany After Third Partial Thyroidectomy. H. B. Gessner, New Orleans.—p. 382.

New York Medical Journal

Nov. 16, 1921, **114**, No. 10

Galen and His Times. J. Wright, Pleasantville.—p. 557.
Diagnostic Value of Pupillary Symptoms in General Disease. M. L. Foster, New Rochelle.—p. 563.
Ocular Factor in Headache. J. A. Kearney, New York.—p. 565.
Mobilization of Bony Ankylosis of Knee Joint; Arthroplasty. C. Ogilvy, New York.—p. 566.
Treatment of Fracture of Femur. W. H. Irish, New York.—p. 568.
Radium in Surgery. W. S. Schley, New York.—p. 573.
Etiology and Treatment of Hand Infections. C. D. Hill, Jersey City, N. J.—p. 575.
Important Points in Bone Surgery. J. W. Walsh, Brooklyn.—p. 576.
Thoracic Tumor Mistaken for Aneurysm. H. I. Goldstein, Camden, N. J.—p. 578.
Psychotherapy. C. R. Ball, St. Paul.—p. 580.
Organic Conditions Associated with Psychoneuroses. C. B. Covey, Waukesha, Wis.—p. 583.
Acute Diffuse Suppurative Labyrinthitis with Report of Cases. J. Friedman and S. D. Greenfield, New York.—p. 585.
Immanence of Health. J. J. McNulty, New York.—p. 589.
Syphilis. J. H. Stevens, Boston.—p. 592.
Mercurial Therapeusis of Syphilis. L. G. Hadjopoulos, R. Burbank and L. P. Kyrides, New York.—p. 596.

New York State Journal of Medicine

November, 1921, **21**, No. 11

*Nonspecific Protein Therapy in Arthritis and Infections. Remarks on Nature of Clinical Reaction. D. M. Cowie, Ann Arbor, Mich.—p. 395.
*Dietetic Treatment of Arthritis with Special Relation to Maximum Fat Feeding. F. R. Wright and R. S. Hubbard, Clifton Springs, N. Y.—p. 403.
*Treatment of Arthritis by Drugs. S. W. Lambert, New York.—p. 406.
*Special Treatment of Chronic Arthritis. C. E. Coon, Syracuse, N. Y.—p. 409.
Painless, Nondisseminating Chemical Removal (Zinc Chlorid) of Inoperable Cancer of Breast and Axillary Nodes. C. W. Strobell, New York.—p. 411.
Anthrax in Infants and Children. G. D. Scott, New York.—p. 417.
Endoscopic Excision of Tracheal Web. C. J. Imperatori, New York.—p. 425.

Nonspecific Protein Therapy in Arthritis.—Not until after all foci of infection have been carefully considered should the advisability of using foreign protein therapy be considered, says Cowie. One might argue because of the effect on local infectious foci, as those of the eyes and ears and skin, foreign protein might in itself clear up an infectious focus, but the best practice is to eliminate a known focus first. We learn from the clinic that the acute local processes are benefited most, as well as those parts to which there is a free blood supply. Cowie seldom uses a dose under 500,000,000, and children, as well as adults, have received billion doses. Reactions are usually sharp and include the unpleasant symptoms of nausea, headache, and sometimes vomiting. There has never been an untoward result. Cowie thinks it is perfectly safe to fix the average dose for child or adult at 100,000,000 dead typhoid bacilli and the maximum at 500,000,000. Succeeding doses may have to be increased in certain individuals and in certain types of cases. There may be found a failure of response, and a gradual decrease in the clinical reaction with same dose. On the other hand, a marked clinical reaction may occur with the same size dose and a definite decrease may take place in the blood reaction. Cardiac decompensation, acute cardiac difficulties, and conditions associated with hyperthyroidism should be considered contraindications. It is also thought that intravenous protein injections increase gastro-intestinal peristalsis; hence the importance of careful consideration before employing them in intestinal hemorrhage to increase blood coagulability. If time and clinical observation is of any value in determining this point, Cowie says that years after foreign protein treatment he has not encountered any bad results that could be attributed to the treatment.

Maximum Fat Feeding in Arthritis.—From their studies on the application of a diet containing 80 per cent. of the calories as fat and 10 per cent. as carbohydrate to arthritics Wright and Hubbard considered such a diet a little too high in fat for practical use, but diets containing a slightly lower percentage of fat—say from 70 to 75 per cent.—seem well adapted to the need of the patient. They have fed such diets in a number of instances, and have not found that more than slight traces of the acetone bodies were excreted by any of the patients. In each case the metabolic requirement should be determined, and the response to the diet followed by urine analyses. In this way diets can be fed containing minimal amounts of carbohydrate while maintaining body weight.

Drug Treatment of Arthritis.—The treatment of arthritis, Lambert says, comprises the elimination of all foci of infection by the streptococci and allied pathogenic germs; the overcoming of the growth of those germs in the blood and in the colon; the assisting of the elimination of the toxins of the germ growth; the caring for the painful joints and the alleviating of the general symptoms of the disease, and finally the supporting of the strength of the patient by an appropriate diet which shall not add to the poisons of the disease itself. Drugs are useful for all these therapeutic indications, but there is no specific, and the disease must be attacked by a course of treatment of much detail.

Special Treatment of Chronic Arthritis.—Lack of appreciation of the mechanics of the forces which produce the deformities, Coon says, is a very important and much neglected part of the treatment of arthritis, no matter how one may classify arthritis or treat it, if the disease is progressive, deformities will occur, and early attention may mean better function and more comfort in succeeding years.

Ohio State Medical Journal, Columbus

Nov. 1, 1921, **17**, No. 11

Fractures from a Surgical Standpoint. R. Carothers, Cincinnati.—p. 733.
Medical and Medical Defense Aspects of Fractures. J. E. Tuckerman, Cleveland.—p. 735.
Legal Phases in Relation to Liability for Malpractice with Special Reference to Fractures. L. E. Eastman, Toledo.—p. 739.
Public Health Work in Portage County. R. D. Worden, Ravenna.—p. 745.
Latent Tonsillar and Peritonsillar Abscess. E. G. Galbraith, Toledo.—p. 749.
Chylous Ascites: Report of Four Cases. M. A. Blankenhorn, Cleveland.—p. 751.

Unexplained Morbidity of Puerperium: Report of Case. A. Rogers, Columbus.—p. 755.
Physical and Psychical Reaction of Child to Its Environment. H. C. King, Lakewood.—p. 758.
Skin Changes Accompanying Certain Constitutional Diseases. J. L. Murray, Toledo.—p. 761.
Future of Medicine as Affected by Ultraspecialization. E. H. Ochsner, Chicago.—p. 764.

Public Health Journal, Toronto

November, 1921, **12**, No. 11

Rôle of Microscope in Diagnosis of Syphilitic Infection. R. W. Naylor.—p. 481.
Community Nursing at Sulphide. J. Farquharson.—p. 492.
Leprosy in Inverness County. P. S. Campbell.—p. 495.
Syphilis: Its Relation to Infant Mortality and Child Welfare. E. A. Morgan.—p. 500.
Victorian Order of Nurses. Child Who Is "Different." A. Joynes.—p. 507.

Surgery, Gynecology and Obstetrics, Chicago

December, 1921, **33**, No. 6

Technical Points in Abdominal Surgery. J. Schoemaker, Holland.—p. 591.
Fellowship Address. H. J. Stiles, Edinburgh, Scotland.—p. 597.
Old Methods Versus New in Surgical Diagnosis. J. B. Deaver, Philadelphia.—p. 605.
*Massive Hypertrophy of Breast. L. D. Keyser, Rochester, Minn.—p. 607.
*Bacteriology and Pathology of Fallopian Tubes Removed at Operation. A. H. Curtis, Chicago.—p. 621.
*Treatment of Pyelitis. H. L. Kretschmer, Chicago.—p. 632.
Treatment of Peripheral Nerve Injuries. F. J. Tees, Montreal, Can.—p. 641.
Diagnosis of Peripheral Nerve Lesions. F. H. Mackay, Montreal, Can.—p. 646.
*Preoperative Preparation of Patients with Obstructive Jaundice. W. Walters, Rochester, Minn.—p. 651.
Blood Vessel Suture. J. M. Neff, Chicago.—p. 657.
Diagnosis and Surgical Treatment of Tumors in Front of Spinal Cord. C. A. Elsberg, New York.—p. 670.
Surgery of South China. J. O. Thomson, Canton, China.—p. 674.
Case of Diverticulum of Ascending Colon. R. O'Callaghan, Calgary, Alberta.—p. 679.
*Disconnecting Gastro-Enterostomy Stomata. Clinical and Experimental Study. R. C. Webb, Minneapolis.—p. 681.
Mycetoma. H. L. D. Kirkham, Houston, Texas.—p. 687.
*Treatment of Fracture of Neck of Femur. H. P. H. Galloway, Winnipeg, Man.—p. 692.
Posterolateral Incision for Removal of Loose Bodies from Posterior Compartment of Knee Joint. M. S. Henderson, Rochester, Minn.—p. 698.
*Treatment of Caries of Hip Joint; Use of Traction Abduction Splint. E. H. Bradford, Boston.—p. 700.

Massive Hypertrophy of Breast.—Four cases of this condition are recorded by Keyser. He states that massive hypertrophy of the breast is of two types: (*a*) fibro-epithelial and (*b*) adipose. It may occur between the ages of 12 and 48 but is most frequently associated with puberty or pregnancy. The normal development of the breast seems to depend on the ovary, and there is evidence which strongly suggests that the massive hypertrophy may be related etiologically to an ovarian malfunction. If spontaneous regression of the process fails to occur, surgical amputation is, at present, the preferred treatment.

Pathology of Fallopian Tubes.—The diseased tissues removed from 192 cases were submitted to bacteriologic study and analyzed by Curtis. Cultures were positive in 38 cases, as follows: gonococcus, 19; nonhemolytic sterptococcus, 6; hemolytic streptococcus, 3; anaerobic streptococcus, 5; *Bacillus coli*, 3; mixed infection, 3; *Bacillus proteus*, 1. Nine revealed tuberculosis. The results of this work again direct attention to the dangers of uterine instrumentation. Nearly all streptococcus infections in this series were traceable to instrumental abortion or subsequent intra-uterine manipulation; some tubal infections recurred after curettage; tenth dilatation was followed by streptococcic pelvic abscess. It would appear that the normal uterus and fallopian tubes are comparable with an unopened tube of culture media; passage of instruments through the bacterial barrier of the internal os is analogous to removal of the cotton plug, and nature is not always able successfully to combat infection before serious lesions have resulted. This is particularly true if infection which has been previously introduced is stirred up through subsequent instrumentation.

Treatment of Pyelitis.—Kretschmer's paper is based on a study of 200 cases of renal infection. More or less accurate cystoscopic data were available in 177 of the cases. Pathologic changes were seen in 128 cases. Eighty-nine patients gave a history of having had some sort of surgical operation. In cases of acute colon bacillus pyelitis, instrumental or local treatment was not resorted to. The treatment of the chronic cases of pyelitis consisted of (1) vaccine therapy, (2) medical treatment and (3) pelvic lavage. Pelvic lavage with silver nitrate was found to be an efficient, simple method for treating infections in the renal pelvis. In this series of cases 66.4 per cent. of the patients treated were finally discharged with urine sterile and free of pus. Careful routine examinations of the urine in all cases of obscure abdominal pain is urged before patients are subjected to surgical operation.

Preoperative Preparation in Cases of Obstructive Jaundice.—In order to determine whether deaths from hemorrhage were dependent on an elevated coagulation time and marked jaundice, a study was made by Walters of the case histories. Fifteen jaundiced patients dying from postoperative (intra-abdominal) hemorrhage and fourteen jaundiced patients dying from causes other than hemorrhage. The effect of preoperative preparation on coagulation time of venous blood in patients with obstructive jaundice was also considered. It was evident that most patients with obstructive jaundice who die after operation succumb from intra-abdominal hemorrhage. In most cases postoperative hemorrhage occurs when the coagulation time of the venous blood is longer than nine minutes. The coagulation time of the blood can be reduced greatly and the toxicity diminished in patients with obstructive jaundice by daily intravenous injections of 5 c.c. of a 10 per cent. calcium chlorid solution for a three-day period. Carbohydrates and glucose prevent disintegration of body proteins when the patient is in a state of toxemia. Large quantities of water aid in eliminating toxic bile pigments and increase the body fluids. It is self-evident that in operations for obstructive jaundice the various steps of the operation be carried out with the utmost gentleness, care being taken not to traumatize the tissues, especially of the liver, and for this reason cholecystectomy should not be performed at the primary operation if it can be avoided.

Disconnecting Gastro-Enterostomy Stomata.—Three cases are reported by Webb in which the Andrews operation was employed successfully. The results in these three cases and in the two animal experiments prove the value of the use of a cuff of stomach wall and the efficiency of the method to prevent constriction. These cases also illustrate that gastro-enterostomy should not be performed without demonstration at the time of operation of the definite indication or lesion.

Treatment of Fracture of Neck of Femur.—In the treatment of these cases Galloway advocates complete removal of the head and neck of the femur, followed by implantation of the trochanter in the acetabulum.

Treatment of Caries of Hip Joint.—Evidence is presented by Bradford demonstrating that caries of the hip joint taken early and treated thoroughly can be cured definitely with practical restoration of function.

Wisconsin Medical Journal, Milwaukee

November, 1921, **20**, No. 6

*Sequels of Epidemic Encephalitis. P. Bassoe, Chicago.—p. 263.
Ocular Manifestations in Lethargic Encephalitis. G. I. Hogue, Milwaukee.—p. 268.
Metabolic Diseases Caused by Tissue Extract (Cytost). F. B. Turck, New York.—p. 271.
Infections of Kidney. W. J. Tucker, Ashland.—p. 277.
Obstetrics in Rural Communities. B. J. Wadey, Belleville.—p. 285.

Sequels of Epidemic Encephalitis.—Among the sequels observed by Bassoe the following are the more striking and frequent types: (1) The paralysis agitans syndrome, unilateral or bilateral, stationary, regressive or slowly progressive, sometimes combined with neurasthenic or psychotic symptoms; (2) cases with prolonged psychoneurotic condition of marked hypochondriacal character; (3) a prolonged simple exhaustive state similar to what is usually called neurasthenia; (4) hemiplegic types. Not common and often mixed with other features; (5) persistent somnolence, and (6) persistent disturbance of innervation of muscles of the face and the jaw. Illustrative cases are cited.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Surgery, London

October, 1921, **9**, No. 34

Reconstruction of the Common Bile Duct. A. J. Walton, London.—p. 169.
Bone Grafting. M. F. Forrester-Brown, Edinburgh.—p. 179.
*Chronic Duodenal Ileus. D. P. D. Wilkie, Edinburgh.—p. 204.
Testicular Symptoms in Appendicitis. Z. Cope, London.—p. 215.
Fracture of Humerus in an Individual with Obscure Bone Lesions. E. E. Hughes, Manchester.—p. 217.
*One Hundred Operations for Gallstones in Private Patients: Special Reference to Recurrence. G. Barling, Birmingham.—p. 221.
*Cystic Disease of First Rib Causing Lower Arm (Klumpke) Type of Paralysis. W. C. B. Meyer, London.—p. 224.
*Tuberculosis of Flat Bones of Skull. V. St. John, Transylvania.—p. 228.
*Cysts and Papillomas of Breast. G. L. Cheatle, London.—p. 235.
Reconstruction of Ankylosed Knee-Joints. W. I. D. Wheeler, Dublin.—p. 242.
Reconstruction of Shoulder by Bone Transplant. W. I. D. Wheeler, Dublin.—p. 247.
*Bronchobiliary Fistula. A. H. Burgess, Manchester.—p. 253.
Traction Fracture of Lesser Trochanter of Femur. H. Poston, Manchester.—p. 256.
Operative Treatment of Closed Fractures of Long Bones by Metal Bands; Description of New Instrument. E. G. Stanley and J. Gatellier, Paris.—p. 259.

Chronic Duodenal Ileus.—Chronic duodenal ileus from compression of the third part of the duodenum by the root of the mesentery, Wilkie asserts, is a clinical and pathological entity. It may be associated with duodenal or gastric ulcer, and with biliary and pancreatic lesions. Visceroptosis and congenital lack of fixation of the proximal colon predispose to its development. Fixation of the proximal colon may relieve certain cases. Drainage of the dilated duodenum by duodenojejunostomy is the most certain method of treatment, and the only one suited for well developed and late cases. Acute dilatation of the stomach either idiopathic or postoperative, is probably merely a gross manifestation of a previously present chronic condition. Four cases were reported by Wilkie.

Testicular Pain in Appendicitis.—Testicular pain or discomfort, Cope says, occurs in probably about 5 per cent. of the cases of appendicitis occurring in the male. The pain is often not so severe as the general abdominal pain, and may not be complained of by the patient unless he be directly questioned on the point. The pain is either a dull aching or of a sharp shooting nature. Cope believes it to be a pure referred pain, since the appendix and testicles appear to be supplied by the same cord segment.

Cholecystectomy for Gallstones.—Removal of the gallbladder rather than draining, in Barling's opinion, should be the routine procedure because an easier and safer recovery follows, although it does not prevent recurrence of stone in the common duct.

Cyst of Rib Causes Lower Arm Paralysis.—The tumor in Meyer's case was situated between the posterior border of the left sternomastoid and the anterior border of the trapezius, its lower margin encroaching over the clavicle superficially. It was soft, nonfluid, nonpulsatile, with a smooth surface, presenting three or four distinct lobulations, and with a very clearly defined edge. It moved remarkably freely in all directions, was subcutaneous, and the skin moved easily over its surface. The left first rib—more particularly its posterior half—was full of cystic spaces and the rib itself was expanded and irregular in outline. The left transverse process of the first dorsal vertebra exhibited the same cystic change. In addition to the superficial tumor there was a deeper tumor involving the pleura. Pressure caused almost complete physiologic interruption of the first dorsal nerve root. The eighth cervical root was also suffering from pressure and the second dorsal nerve showed irritative sensory pressure signs. It was clear that either the expanded first rib or the deep tumor or both together could cause these pressure symptoms. Operation established the diagnosis of hydatid disease of the first rib, the superficial and deep tumors being connected with the rib by perforations in the expanded bone. The superficial tumor had a long, narrow pedicle leading to the first rib, while both tumors were filled with a thick creamy substance, which closely resembled the sebaceous secretion of dermoids, but was entirely odorless. Daughter cysts of varying size were present and from these scolices of *Tenia echinococcus* were obtained.

Tuberculosis of Skull.—Four cases of cranial bone tuberculosis are cited by St. John. The disease has but one symptom of any practical value, the cold abscess; and the diagnosis, like the symptom, loses much of its worth from the fact of its coming too late. This is an insidious affection which can make astonishing progress without giving obvious signs of its presence, and which is consequently all the more dangerous. A real symptom would be headache; but this is often absent and when present it is of equivocal value since it is perhaps more frequently indicative of cranial syphilis than of tuberculosis. The local treatment is operative, and only operative. Repeated interventions are sometimes necessary but all surgical intervention must be as extensive in degree as is demanded by the extent of the disease.

Papilloma of Breast.—Two forms of papilloma in ducts are discussed by Cheatle. The papilloma with a single fibrous stalk of attachment he terms uniradicular papilloma. The papilloma with many stalks of attachment to the duct in which it occurs is termed multiradicular papilloma.

Bronchobiliary Fistula.—Burgess cites the case of an elderly woman, apparently in good health and without any previous illness of note, suddenly commenced without any obvious cause to cough up bile, and has continued to do so in amount from 10 to 20 ounces daily for the past five months. Physical examination failed to reveal anything definitely abnormal. A diagnosis was made of bronchobiliary fistula of unknown origin. A laparotomy was performed as the patient was becoming exhausted. The findings led Burgess to conclude that the most probable sequence of events had been—gallstones in the gallbladder and common duct; suppurative cholangitis, perforation of the left hepatic duct; formation of a small subphrenic abscess between the extremity of the left lobe of the liver, diaphragm, spleen and lesser curvature of the stomach; adhesion of the left lung to the upper surface of the corresponding area of the diaphragm; gradual inspissation of the contents of the abscess with thickening and calcification of its walls; extension of the lumen upward through the diaphragm into the left lung, and finally rupture into one of the smaller bronchi with development of a bronchobiliary fistula.

Glasgow Medical Journal

November, 1921, **96**, No. 5

Postnatal Treatment of Congenital Syphilis. G. B. Fleming.—p. 257.
Sulfarsenol in Congenital Syphilis. E. Crawford.—p. 263.
Antisyphilitic Action and Other Effects of Arsenical Compounds in Relation to Their Constitution. C. H. Browning.—p. 266.
Antenatal Treatment of Congenital Syphilis. J. R. C. Greenlees.—p. 270.
Ravages of Congenital Syphilis—How to Combat Them: Plea for Notification. L. Findlay.—p. 278.
Syphilis as Seen by a Hospital Physician. T. K. Monro.—p. 284.

Indian Medical Gazette, Calcutta

April, 1921, **56**, No. 4

*Malaria and Lost Cities of Ceylon. L. Nicholls.—p. 121.
Dangers of Delay in Operating on Appendicitis in Children and Pregnant Women. F. J. W. Porter.—p. 130.
Off-Hand Diagnosis of Cataract. S. K. Ganguly.—p. 131.

Malaria Destroys Cities of Ceylon.—Nicholls writes of ancient cities of the island of Ceylon which have fallen to ruin because of the exodus from them of peoples who became malaria infested and wandered away in search of a more healthful locality. Extensive and wonderful ruins of cities of an ancient civilization are scattered throughout the large areas of forests of the north central province of Ceylon. The existence of these ruins was unknown at the beginning of the last century, but the Sinhalese priests had preserved a record called the Mahawansa, which relates the history of Ceylon from about 500 B. C. on and recounts the building and the rise of these cities.

October, 1921, **56**, No. 10

*Typhus-Like Fever in India, Possibly Transmitted by Ticks. J. W. D. Megaw.—p. 361.
Twelve-Day Fever of Nigeria. J. W. D. Megaw.—p. 371.

Use of Galvanic Current in Treatment of Fibrous Ankylosis and Kindred Affections. F. J. W. Porter.—p. 373.
*Formol-Gel Test in Kala-Azar. E. C. R. Fox and F. P. Mackie.—p. 374.
*Iodin Injections for Septic Conditions. A. B. De Castro.—p. 375.
Present Position of Leprosy in India. E. Muir.—p. 375.
Sebaceous Horn. C. C. Murison.—p. 379.
Liver Abscess Treated by Aspiration and Injection of Quinin Hydrochlorid. J. C. John.—p. 379.

Typhus-Like Fever in India.—Megaw's personal experience and a consideration of the available evidence have led him to form a strong suspicion that the disease is one affecting the animals of the jungle and that it is conveyed to man by a tick, and that the disease is either the same as Rocky Mountain fever or, at any rate, closely related to it. The disease is probably widely distributed in India and other parts of the world, but remains unrecognized because of its superficial resemblance to typhoid fever.

Formol-Gel Test in Kala-azar.—Fox and Mackie have devised a simple technic by which the test may be applied by the general practitioner with the minimum of equipment. (*a*) Collect the blood from the finger in a Wright's capsule just as is done for the Widal reaction for typhoid fever. (*b*) When the serum has separated from the clot take one drop and place it on a slide. (*c*) Invert the slide over a watch glass containing a few drops of commercial liquor formaldehyd solution, the vapor from which will arise and act on the drop of serum. In cases of kala-azar the serum will solidify in a few minutes, while other serums will remain fluid and unaffected. The solidified serum is opaque and is in the condition of a stiff jelly which adheres to the slide, whilst the serum in negative cases will run off the slide when it is tilted.

Iodin Injections for Septic Conditions.—In the Andaman Isles, during the monsoon weather, ulcerative processes of various gradations, from the simple punctured "angry looking," to the extensive phagadenic type, are by no means uncommon. The results accruing from the use of phenylsalicylate locally, and tincture of iodin injections intravenously in alternate cases were most gratifying; but with far-reaching, quicker, and greater beneficial action with the iodin injections than the phenylsalicylate dusting. De Castro invariably starts with an injection of tincture of iodin, 5 minims in 1 c.c. physiologic solution of sodium chlorid, and goes up to 20 minims in 10 c.c. The injections in bad cases are given every day, in ordinary cases every second day. Within thirty-six or forty-eight hours after the injections, an unhealthy looking surface freshens up and takes on a healthy look, sloughs are cast off, profuse discharges of pus stop, and healthy granulations start to shoot up all around. In extensive necrotic ulceration, if there is a concomitant pyrexial condition, the temperature falls to normal, and pain also disappears.

Journal of Laryngology and Otology, Edinburgh

November, 1921, **36**, No. 11

Nasal Sinusitis in Children. F. J. Cleminson.—p. 505.
Experiences of an Otologist in France, 1915-1919. J. K. M. Dickie.—p. 514.
Vestibular Reactions in Deaf-Mutes. G. Young.—p. 524.
Fatal Case of Shawl Pin in Esophagus. W. F. Wilson.—p. 526.

Journal of State Medicine, London

November, 1921, **29**, No. 11

Problems of Industrial Hygiene in Relation to Public Health. T. Oliver.—p. 321.
Prevention of Venereal Diseases. E. W. Hope.—p. 333.

Medical Journal of Australia, Sydney

Oct. 22, 1921, **2**, No. 17

Prevention and Treatment of Pulmonary Tuberculosis. J. W. Brown.—p. 333.
*Problem of Tuberculosis. D. R. W. Cowan.—p. 341.
Blood Transfusion in Case of Puerperal Streptococcal Septicemia. S. Crawcour.—p. 347.

Tuberculin in Pulmonary Tuberculosis.—The specific treatment of pulmonary tuberculosis by means of tuberculin is specially commended by Cowan. The general treatment of the patient must necessarily be joined with the tuberculin treatment. This combination of the two treatments is at present the most efficient means of combating active pulmonary tuberculosis. If the combination of treatments be not possible, tuberculin by itself must be used whenever it can be done. More will certainly be achieved with it than with any other method of treatment used by itself. Cowan believes that every patient with early tuberculosis before the "open" stage has been reached can be cured by means of tuberculin, frequently with no radical alteration in his ordinary mode of living and with the minimum of interference with his ordinary avocation. Once a patient has an "open" form of tuberculosis, with all its consequent risk of mixed infections, the chances of cure are uncertain, no matter what treatment is adopted. This is an indication of how imperative it is to diagnose these cases before this stage arrives and to treat the patients during the period when they can be cured.

Oct. 29, 1921, **2**, No. 18

*Simplified Sacral Proctectomy. W. J. S. McKay, Sydney.—p. 365.
"Oxyuris Incognite" in Australia. G. H. Burnell, Brisbane.—p. 374.
*Simple Levitation Method for Detection of Hookworm Ova. H. H. Willis.—p. 375.
Three Cases of Cancer of Pelvic Colon Complicating Gynecological Operation. R. Worrall.—p. 376.

Sacral Proctectomy.—McKay describes an operation which he claims is almost bloodless and shock is reduced to a minimum because the essential stages can be performed in thirty minutes; the tying off of vessels and sewing up occupying a similar time. An inguinal colostomy is done two weeks before the sacral operation is undertaken. The incisions were made in a similar way to those employed by Miles in the perineal portion of his abdominoperineal operation for cancer of the rectum. The details of the various steps or stages of the operation are described.

Detection of Hookworm Ova.—In the method employed by Willis the specimen is mixed with salt solution. After waiting a few minutes to allow the ova to rise, a clean, polished slide is placed on the container in contact with the surface of the fluid. After a further few minutes this is gently removed, inverted and examined under the microscope with a magnification of 100 times. If it be negative, a second slide is placed on the brim of the container and similarly examined. In special cases it may be desirable to examine more than two slides prepared in this way, but experience has shown that for ordinary work two are sufficient. Many advantages are claimed for the method, not the least of which is its great freedom from error.

Practitioner, London

November, 1921, **107**, No. 5

Diabetes Mellitus. W. H. Willcox.—p. 305.
Surgery of Right Iliac Fossa. J. E. Adams.—p. 322.
Treatment of Cardiospasm. N. Mutch.—p. 339.
*Recurrent "Colds in Head" F. Stoker.—p. 348.
Nonthyrotoxic Goiter. E. G. Slesinger.—p. 355.
Three Cases of Fracture of Scaphoid Bone (Wrist). F. D. Saner.—p. 367.
Review of 150 Cases of Surgical Operations under Local Anesthesia. K. S. Ray and L. M. Sen.—p. 371.
*Familial Jaundice. J. B. C. Brockwell.—p. 375.

Recurrent Colds in Head.—In addition to taking measures to remove foci of infection in the accessory nasal sinuses, the tonsils, the teeth and elsewhere, Stoker suggests that owing to the resemblance of the phenomena of hyperthyroidism to the condition obtaining in the nose during an attack of spasmodic rhinorrhea, soluble calcium salts would seem to be strongly indicated, and as a matter of fact are often of great benefit, particularly the freshly prepared lactate in doses of from 15 to 30 grains three times a day after meals.

Familial Jaundice.—Brockwell reports the case of a woman, aged 37, who had had seven full term pregnances and two miscarriages at the fourth month. All the children, except the first, developed "jaundice" on the second or third day, which lasted for about five months, except in the case of the fourth child, which died, aged one week, from "jaundice and convulsions." The mother had always had good health; neither she nor her parents, brother, or sisters have had jaundice. Syphilis could be excluded. The patient was six months pregnant. She was given 10 grains of sodium salicylate with 5 grains hexamethylenamin three times daily up to the date of confinement. There was no vomiting throughout

the pregnancy. She was duly delivered of a healthy male child and up to now (seven months) there has been no suspicion of jaundice in the child.

South African Medical Record, Cape Town

Oct. 8, 1921, **19**, No. 19

Cases of Venereal Disease. H. Gluckman.—p. 362.
Sachs-Georgi Syphilis Reaction. T. J. Mackie.—p. 363.
South American Impressions. D. P. Marais.—p. 369.

Oct. 22, 1921, **19**, No. 20

Treatment. D. C. Watt.—p. 382.
Use of Bone Graft; Illustrative Cases. W. Welchman.—p. 385.
Public Health in Union. J. A. Mitchell.—p. 390.

Annales de Médecine, Paris

1921, **10**, No. 3

*Progressive Myasthenia. P. Marie, H. Bouttier and I. Bertrand.—p. 173.
*Determination of Albumose Content of the Blood. E. Wolff.—p. 185.
*Glandular Dystrophia. V. Hutinel and M. Maillet.—p. 198.
*Decerebrate Rigidity in Man. J. Lhermitte.—p. 228.

Progressive Myasthenia.—The necropsy findings are illustrated from a case of Erb-Goldflam's disease previously published with emphasis on the great and permanent benefit derived from suprarenal treatment. The nervous system was found apparently intact; the classic picture of bulbospinal myasthenia was thus presented without any lesions in the nerve centers. Small lymphoid nodules scattered throughout the suprarenals and the muscles testified that the suprarenals and muscles must have been responsible for the disease, and explained the benefit from the suprarenal treatment. The improvement had persisted for six months when the woman died in a few days after the onset of pulmonary edema.

Albumosemia.—Wolff has devised a micromethod for estimating the albumose content of the blood, and describes the findings with it in health and in various diseases. The physiologic albumosemia never averages above 0.8 per thousand, but it is high in fevers and in leukemia.

Glandular Dystrophia.—In this second article, Hutinel and Maillet discuss monosymptomatic dystrophia, especially from aplasia or atrophy of testicles, ovaries, and kidneys. They summarize from their own and others' experience eighteen cases of the various kinds of dystrophia, including some of infantilism with chronic nephritis.

Decerebrate Rigidity in Man.—Lhermitte reviews the recent literature on this subject and discusses the physiologic data and clinical applications. The war has thrown much light on the release of function in the nervous system when the brain is shut off.

Archives de Médecine des Enfants, Paris

November, 1921, **24**, No. 11

*Scurvy in Infants. J. Comby.—p. 649.
*Partial Sclerosis of Lung in Children. P. Duhem.—p. 663.
*Plague in Children. L. Guinon and Mlle de Pfeffel.—p. 670.
*Pernicious Anemia in Girl of Fourteen. Mlle. Condat.—p. 676.
Primary Ileocecal Sarcoma in Boy of Eight. Idem.—p. 679.
*Bubonic Plague at Paris. J. Comby.—p. 681.

Scurvy in Infants.—Comby adds twelve more cases to his record, bringing his total to seventy-two, and he declares that in 90 per cent. the correct diagnosis had not been made until the pediatrist was called in. In more than 22 per cent. there had been no hemorrhage from the gums, and he based his diagnosis solely on the kind of food the child had been getting and the pains in and impotence of the legs, the child screaming when it was moved. This painful pseudoparaplegia is practically never absent. There is never hemorrhage from the gums in infants without teeth.

Sclerosis of Lung in Children.—Duhem gives roentgenograms showing the hilus type and the diaphragm type of partial sclerosis of the lung in children. When there is extensive sclerosis of the lung, it drags the heart out of place as the lung tissue retracts. There may thus be displacement of the heart to the right or left.

Bubonic Plague in Children.—Among the special features that distinguished the six cases of plague in children from the disease in adults were a pyodermatitis and plague meningitis. The exanthema was mistaken for smallpox at first. The meningitis developed the ninth day, notwithstanding the intravenous and intramuscular use of antiplague serum for nine days. There were no hypertrophied glands at any time in the two cases described in detail.

Pernicious Anemia in Child.—In Condat's case the anemia of the aplastic type became installed soon after puberty, and the girl of 14 died the ninth month after the onset of menstruation.

Plague at Paris.—Comby reviews the various publications on the small epidemic of bubonic plague at Paris. They testify, he remarks, that plague can be easily stamped out in civilized communities. None contracted the disease among the 1,000 contacts given prophylactic vaccination. Among the 91 cases recorded, the mortality was 80 per cent. among the 40 not receiving serotherapy, while it was only 3.9 per cent. among the 52 given intravenous serotherapy.

Gynécologie et Obstétrique, Paris

October, 1921, **4**, No. 4

Welfare Work for Prospective Mothers. A. Doléris.—p. 281. Conc'n.
*Radium Treatment of Uterine Fibromas. J. L. Faure.—p. 290.
*Radium Treatment of Uterine Cancer. H. Hartmann.—p. 301.
*Radium Treatment of Hemorrhagic Metritis. M. Koenig.—p. 317.
*Cesarean Section During Labor. J. Henrotay.—p. 336.
*Cesarean Section During Labor. A. Couvelaire.—p. 358.

Radium Treatment of Uterine Fibromas.—Faure regards medium sized hemorrhagic fibromas as the special field for radium treatment, as also cases in which a major operation is contraindicated on account of weakness or other cause. Almost all other patients with fibromas, he says, should be given operative treatment. The results of operations, on the whole, including the danger of death, immediate or remote, are actually better with operative treatment than with radiotherapy. The first condition for treating a fibroma with radium is the exact diagnosis, and this may require direct inspection. He prefers to operate also on young women when the fibroma is small, and can be resected without interfering with ovarian functioning.

Radium Treatment of Uterine Cancer.—Hartmann found cancer cells still present in the uterus in two of five cases in which the uterus had been removed or taken from the cadaver after a course of radium treatment. The three found apparently free from cancer cells had been given from 30 to 64 millicuries; the two others only 20 and 22. He describes the technic he advocates: Three applicators, end-to-end in a tube, are introduced down to the fundus of the uterus, with another applicator in the culdesac of the vagina each side of the cervix, and a sixth one against the os. Each applicator represents a 50 dose except the two in the cervix, and these represent 100 each. Recurrences are almost always at a distance, in the parametrium, and hence hysterectomy after the exposures seems useless. Eight illustrations are given of the technic.

Radium Treatment of Hemorrhagic Metritis.—Koenig refers to hemorrhages outside of cancer and fibroma cases, and declares that the regularity of the cures under radium is most striking. For women over 40 it is the chosen method, he says, but for younger women he advocates it only after failure of the ordinary measures. Adnexitis contraindicates absolutely any radium treatment, if it is acute, and any intrauterine applications if it is chronic. He has treated in this way only thirty cases, but his experience confirms in every respect those published by others.

Abdominal Cesarean Section.—Henrotay is chief of the Maternity at Antwerp and has compiled 55 cases in which cesarean section was applied for fibroma (12), eclampsia (7), placenta praevia (16), with 6 deaths, or for other cause exclusive of narrow pelvis. All the infants were saved except 4. With infected placenta praevia, he advocates following or preceding the hysterotomy with hysterectomy *en bloc*, as also with manifest infection under any conditions unless vaccine therapy can be perfected. Couvelaire analyzes his experience with 86 high abdominal transperitoneal hysterotomies during labor, exclusive of narrow pelvis cases. In a compilation of 1,040 cases of cesarean section in a number of French clinics, the indications were narrowness of the pelvis in all but 80. He thinks that the tendency now is for the decision to operate

to be made earlier, not left for an emergency operation. The articles in this and the preceding number of *Gynécologie* were presented at the recent gynecologic congress.

Paris Médical

Nov. 5, 1921, **11**, No. 45

*Pediatrics in 1921. P. Lereboullet and G. Schreiber.—p. 341.
*Gastro-Intestinal Lesions in Infants: Causes and Clinical Forms. A. B. Marfan.—p. 352.
Anaphylaxis and Antianaphylaxis in Pediatrics. Pêhu.—p. 357.
*Lack of Fat as Factor in Athrepsia. Nobécourt et al.—p. 363.
Present Status of Serotherapy in Diphtheria. P. Lereboullet.—p. 369.
Intravenous Mercurial Treatment of Infants. G. Blechmann.—p. 374.

Children's Diseases in 1921.—Lereboullet and Schreiber open their annual review with the statement that 1921 has been distinguished by the practical organization of social hygiene for children on a huge scale. Among the important works of the year in pediatrics are Marfan's study of athrepsia in infants (summarized on pages 495 and 1450), Putzig's report of benefit from injection of horse serum as a kind of protein therapy in atrophy in infants, and de Villa's intradermal test with a culture autolysate of the Bordet-Gengou bacillus in the early diagnosis of whooping cough (summarized on page 74). They mention a recently reported case of mild epidemic encephalitis in a woman who soon recovered but her nursling died with symptoms and necropsy findings suggesting the same disease. In conclusion they comment on the increasing value of organotherapy in combating endocrine dystrophia in children, and mention a case of infantilism for which the pituitary was not directly responsible, a tumor being found in the third ventricle.

Digestive Disturbance in Infants.—Marfan classifies three grades of denutrition in young infants by the thickness of the adipose tissue left, especially in the abdomen and trunk.

Fat in Infant Feeding.—The infant, 45 days old, had been given only vegetable bouillon and a salted farinaceous gruel. General edema and a condition defined as azotemic atrophic athrepsia had developed, but the child began to thrive as soon as the salt was dropped and it was given buttermilk to which butter had been added.

Presse Médicale, Paris

Nov. 2, 1921, **29**, No. 88

*Articular Syphilis. A. Broca.—p. 873.

Syphilitic Disease of Joints.—Broca relates that in nineteen of twenty cases of syphilis of the knee sent to him to confirm the diagnosis, the disturbances had been labeled tuberculosis. A number of typical cases are described which demonstrate the necessity for applying the Bordet-Wassermann test in certain cases of hydrarthrosis and arthritis without effusion even when all seems to indicate merely an ordinary traumatic or rheumatic joint lesion, especially when the knee is involved. The bilateral occurrence, the persistence for months and years with alternating periods of improvement and aggravation, the lesion almost or entirely indolent, and not interfering much with ordinary life—these features should suggest search for syphilis.

Nov. 9, 1921, **29**, No. 90

*Hypercholesterinemia and Albuminuric Retinitis. F. Gaudissart.—p. 893.
*Treatment of Acute Articular Rheumatism. R. Lutembacher.—p. 895.
*Anastomosis Between Large and Small Intestine. H. Duboucher.—p. 895.

Hypercholesterinemia and Albuminuric Retinitis.—Gaudissart found hypercholesterinemia only in 7 of 18 persons with albuminuric retinitis, and also in 8 of 16 with chronic nephritis without retinitis. This shows that hypercholesterinemia is not an indispensable factor in albuminuric retinitis, and that it does not always entail the latter. On the other hand, either a high blood pressure or uremia or both were always found in albuminuric retinitis.

Treatment of Acute Articular Rheumatism.—Lutembacher insists that when there is recurrence of the disease, the treatment must have been inadequate. Given properly, sodium salicylate ought to cure this disease once and for all, without danger of recurrence. As in syphilis, the cure depends on the early diagnosis, adequate doses and perseverance in giving them. Sodium salicylate is rapidly eliminated and the dose should be regulated to correspond to the elimination. It is much more rapid in children than in adults. To avoid disturbing the stomach, the drug can be given by the vein. The elimination then takes twelve or thirteen hours, and the drug gets a better chance to ward off complications involving the heart. After the disease has apparently subsided, he keeps up the large doses for two or three weeks longer, and then continues with small doses for another three or four weeks. The mild cases are the ones that usually get neglected, the medication being dropped as soon as benefit is apparent, when in reality the tenacious sepsis takes vigorous and prolonged treatment to eradicate. He makes a practice of giving 2 or 3 gm. of sodium salicylate for ten days each month for the following twelve or eighteen months even when there is nothing to suggest recurrence. By this means the disease does not return, if treatment was begun at the first attack. The infection becomes more tenacious in recurrences. For intravenous use he recrystallizes the sodium salicylate, and injects a 1:30 solution in a 3 gm. dose twice a day. In eight very severe cases with heart and lung complications, this proved the only means to arrest these complications. Two of the patients were unable to bear the drug at all by the mouth. He infuses a little of a physiologic solution of sodium chlorid directly afterward to prevent hardening of the vessel wall.

Anastomosis Between Large and Small Intestine.—Duboucher's illustrations show the simple technic with which the small stump is invaginated in the large stump with the edge of the latter turned in with it. The extra width is puckered in above the invaginated stump: first four stitches, one on each side, and then four more in the interspaces. This forms a firm and safe union, leaving the lumen entirely free below.

Progrès Médical, Paris

Oct. 22, 1921, **36**, No. 43

*Duodenal Ulcer. G. Parturier and P. Vasselle.—p. 495.
Antianaphylaxis Action of Mineral Waters. G. Billard, Ferreyrolles and A. Mougeot.—p. 502.

Oct. 29, 1921, **36**, No. 44

The Blood and Circulation in the Pregnant. H. Vignes.—p. 507.
Clinical Forms and Diagnosis of Miliary Tuberculosis. L. Ramond.—p. 509.
Tuberculosis in Hernia. Metzquer.—p. 513.
Fracture of Joints. Idem.—p. 513.

Differential Diagnosis of Duodenal Ulcer.—Parturier refers to the ulcer remote from the pylorus and free from complications. This portion of the duodenum has a silent and deceptive pathology, periods of apparent health intervening. This evolution by successive attacks is the most characteristic feature of this form of duodenal ulcer, much more instructive than the tardy pain. The appetite keeps good, and the pain at night, starting in the right hypochondrium, is not accompanied by vomiting. Besides the classical signs of contracture of the right rectus, occult bleeding, and hyperchlorhydria, he emphasizes the import of the tender point in the left side of the neck, and tenderness in the duodenum, when it is forced against the rear wall of the abdomen by palpation along the line connecting the tenth rib with a point at the center of a line connecting the crests of the iliacs. Another sign is the relief, rather than the aggravation, of the pain on deep inspiration. An enema of antipyrin and laudanum has also differential importance, as this eliminates the tender points for which the gallbladder or celialgia is responsible. Cancer rarely affects the duodenum. The ulcer is usually on the posterior wall of the duodenum, and is thus liable to escape detection, he says, even when the abdomen is opened.

Revue Franç. de Gynécologie et d'Obstét., Paris

September, 1921, **16**, No. 9

*Surgical Treatment of Uterine Fibroma. E. Alfieri.—p. 465.
*Fluidity of the Menstrual Discharge. J. L. M. Jansen.—p. 479.
Roentgenograms of a Calcified and of a Cystic Uterine Fibroma. L. Bouchacourt.—p. 507.

Surgical Treatment of Uterine Fibromas.—Alfieri reviews a series of 138 operative cases of uterine fibromas, and compares them with various series published by others. All but one of the 138 women were cured of their gynecologic affection; the exception was a case of a racemose cyst in an ovary, left with a small fistula. The list includes 111 abdom-

inal subtotal and 15 total hysterectomies, and 6 vaginal, with 9 myomectomies. Malignant disease was found in 2.17 per cent. of the cases; the adnexa were pathologic in a large proportion of the cases, and heart disease was manifest in 36.2 per cent. of the total. Eight of the women were pregnant; one was in labor and another had just been delivered. The invariable fine results in such series as this should be taken into consideration, he adds, when hesitating between operative measures and radiotherapy.

The Fluidity of Menstrual Blood.—Jansen gives an illustrated description of a cup that fits over the cervix in the vagina and conveys the menstrual blood into a receptacle below the bed. The findings with this apparatus in Treub's service are tabulated from 100 observations. The largest amount thus obtained was 50 c.c. in the twenty-four hours; the smallest, 2 c.c. From 50 to 75 per cent. of the fluid is mucus, and minute flakes of fibrin are scattered through the fluid, with debris of the uterine mucosa. The greater the admixture of blood, the larger and finer are the macroscopic and microscopic clots.

Schweizerische medizinische Wochenschrift, Basel

Oct. 20, 1921, **51,** No. 42. Dedicated to F. Fritzsche

*Roentgenography of Pulmonary Tuberculosis. H. Staub-Oetiker.—p. 961.
Ultimate Results of Operations on Stomach. A. Schwyzer (St. Paul). —p. 966.
*Influence of Menstruation on Chronic Endometritis. K. Meyer.—p. 968.
Cleft Palate Operations. E. Monnier.—p. 970.
*Geography of "Scrofulosis." L. Steiner.—p. 974.
*Treatment of Varices. H. Koller-Aeby.—p. 975.
Infant Mortality in Neighboring Communities. Grämiger.—p. 977.
*Oil Tampon for High Intestinal Fistula. E. Stadler.—p. 978.
Butter-Flour Mixture in Infant Feeding. A. Resch.—p. 978.
Acute Mesocolitis as Complication of Resection of Stomach. A. Wydler. —p. 980.

Roentgenography in Diagnosis of Pulmonary Tuberculosis.—Staub-Oetiker gives his conclusions from the roentgenologic study of over 2,000 tuberculous inmates of a sanatorium at Zurich during the last ten years. Great as is the importance of radiography, he adds, if we trust to it alone we will be led into the grossest blunders. The findings even in the normal hilus are not uniform, and the most striking shadows are cast by harmless healed processes. In children, beginning tuberculosis generally settles at the hilus and thus is more accessible to roentgenoscopy, while percussion and auscultation are less dependable than in adults. Consequently roentgen examination is indispensable for every child with positive skin tuberculin test and symptoms suggesting pulmonary tuberculosis. It is indispensable also to detect chalicosis in stonecutters and others exposed to inhalation of mineral dust, as this is often mistaken for tuberculosis and treated accordingly, when a change of occupation is the one thing needed to ward off disease and death.

Influence of Menstruation on Chronic Uterine Disease.—Meyer calls attention to the instructive case he reports of painful chronic endometritis with profuse purulent discharge which had kept up for three years unmodified by the whole arsenal of measures applied. It was originally of gonococcus origin, and Meyer finally made up his mind that it was the influence of the menstruation that prevented its healing. This supposition was confirmed by the prompt healing as soon as the remaining ovary had been removed.

Scrofulous Eye Disease.—Steiner comments on the rarity of "scrofulous" eye disease noted during his twenty years of ophthalmologic practice in Java, although pulmonary tuberculosis is common. He ascribes this to the scanty clothing and the bamboo houses, the skin being exposed constantly to light and air. Tuberculosis of glands and joints is invited and fostered by the clothing and close houses of colder climes.

Treatment of Varicose Veins.—Aeby reports gratifying results in fifteen cases of disturbances from varicose veins in which he supplemented the ligation of the veins with injection of 5 per cent. phenol.

Cure of a Rebellious Bile Fistula.—Stadler finally cured the persisting bile fistula by packing it with gauze dipped in olive oil. The oil prevented the soaking up of fluids from below, and gave the opening a chance to heal.

Policlinico, Rome

Oct. 31, 1921, **28,** No. 44

*Psychosis After Spinal Anesthesia. G. Bianchi.—p. 1459.
Estimation of Wassermann Reaction. P. F. Zuccola.—p. 1463.
*The Facialis Sign in Children. L. D. Veronese.—p. 1465.
Indications for Treatment with Duodenal Ulcer. P. Gilberti.—p. 1466.

Psychosis After Spinal Anesthesia.—The young man was a hard drinker, and after spinal anesthesia for a herniotomy he developed an acute psychosis, with hallucinations, and recovery in two weeks.

Chvostek's Sign in Children.—Veronese has been testing for Chvostek's sign 413 children examined in the last two years. A positive response was obtained in 21 per cent. All the children were between 5 and 9. In 49 with manifest rachitis it was evident in 28.5 per cent. and in 21.8 per cent. of the 41 tuberculous children, and also in 23.7 per cent. of those who seemed to be free from tuberculosis, rachitis and tetany.

Riforma Medica, Naples

Oct. 8, 1921, **37,** No. 41

*Embryology of Jackson's Membrane. L. de Gaetano.—p. 962.
Auscultation of the Mouth. I. Jacono.—p. 970.

Oct. 15, 1921, **37,** No. 42

Simultaneous Strangulation of External and Internal Inguinal Hernia. S. Scigliano.—p. 985.
Electropuncture in Treatment of Spinal Disease. G. Piccinino.—p. 986.
Renal Adenocarcinoma in Girl of Nine. F. de Gironcoli.—p. 990.
Indol in Urine. O. Cantelli.—p. 993.
Surgical Treatment of Stomach from Physiologic Standpoint. E. Aievoli.—p. 994.

Embryology of Jackson's Membrane.—De Gaetano gives an illustrated description of the findings in several of thirty fetuses examined to detect conditions which might explain the formation of Jackson's membrane in later life. Such were found in about a third of the fetuses, and when the membrane develops from this cause, its removal puts an end to the disturbances without danger of recurrence. But when the membrane is of inflammatory origin, it is liable to form anew after resection. This membranous pericolitis is difficult to cure and is extremely liable to recurrence.

Rivista di Clinica Pediatrica, Florence

Sept. 2, 1921, **19,** No. 6

*Steeple Skull. G. B. Savelli.—p. 321.
*Toxin in Blood Serum During Diphtheria. P. Busacchi.—p. 331.
Case of Rat-Bite Disease. V. Zamorani.—p. 352.

Steeple Skull.—Savelli cites Hochsinger's case in which optic neuritis from congenital steeple skull was manifest in the 4 weeks' babe. He then describes a case in a girl of 5 in which the anomaly was not only congenital but inherited, the mother showing a similar but less pronounced oxycephaly. The sutures in the child were ossified, and convergent strabismus, exophthalmos, atrophic optic neuritis and occasional headaches were the special symptoms. Lumbar puncture showed the pressure normal in the spinal fluid.

Diphtheria Toxin in Serum During Diphtheria.—Busacchi's findings in fourteen cases were positive in some and negative in others, when guinea-pigs were injected with the child's blood serum. It was absorbed without reaction in some, while in others it induced a lively local reaction.

Sept. 20, 1921, **19,** No. 7

*Cerebrospinal Meningitis in Infants. C. Pestalozza.—p. 385.
*The Neck Sign of Inflammation of Meninges. S. Segagni.—p. 409.
Somatic Structure in Congenital Myxedema, and Modification Under Thyroid Treatment. M. Rosso.—p. 422.
Sclerodermia in an Infant. R. Pollitzer.—p. 435.

Oct. 15, 1921, **19,** No. 8

Group Agglutination in Typhoid in Children. D. Caffarena.—p. 449.
Protein Therapy in Typhoid. A. F. Canelli.—p. 495.

Meningitis in Infants.—Pestalozza agrees with those who say that the abortive, incomplete character of meningococcus meningitis is its special feature in infants. This peculiar feature is most marked in the early phase, "the period of diagnostic blunders" as Babaud calls it, but it may persist throughout. Only the spinal puncture fluid will give the clue to the puzzling respiratory and digestive derangement, or mere general malaise. In 10 cases of this meningitis in

infants from 18 days to 7 months old, seen during the last four years, the antiserum was injected subcutaneously in 3; both by this route and intraspinally in 4, and by the latter route alone in 3. In one of the 7 fatal cases there was complicating pneumococcus infection, and in another erysipelas. In 2 of the others the meningitis had been walled off, and this was not discovered until too late. Pestalozza regards as the best treatment an antiserum made from meningococci isolated from the cerebrospinal fluid of some patient in the prevailing local epidemic. When this is not available, a polyvalent antiserum might be preferable, including parameningococci. The 3 infants in his series that recovered were treated by daily injection of the antiserum, alternately subcutaneous and intraspinal. One was given the intraspinal injection alone. These 3 who recovered were 6, 7 and 8 months old. Each of the 10 case histories is given in full to illustrate, as he says, the "typical atypical" course.

The Neck Sign of Meningitis.—Segagni reviews fourteen different phenomena utilized in the diagnosis of meningitis, and emphasizes the instructive character of Budzinski's neck sign, that is, the involuntary flexing of the legs on the thighs and of the thighs on the pelvis when the head is passively forced toward the sternum. This sign occurs early in inflammation of the meninges, and seems to be pathognomonic of this. He found this sign positive in 21 cases of tuberculous meningitis, in 11 of epidemic and 8 of serous meningitis, and in 2 of pneumococcus meningitis secondary to pneumonia. It was never negative except in one moribund child with tuberculous meningitis, while it was never positive among the 2,900 children free from meningitis tested since 1913. A table gives the parallel findings with this sign, the Kernig and the Babinski in 125 cases. They were positive respectively in over 99, in 55 and in 41 per cent.

Anales de la Facultad de Medicina de Lima

May-June, 1921, **4**, No. 21

*Cerebrospinal Meningitis Induced by Micrococcus Catarrhalis. J. Arce.—p. 159.
Cantharides Used in Ancient Peru. E. Escomel and A. Maldonado.—p. 170.
*Infant Mortality in Peru. R. Eyzaguirre.—p. 175.
Pathogenesis of Dementia Praecox. Bayard Holmes.—p. 185.
Studies on the Materia Medica of Peru. A. Maldonado.—p. 194.

Micrococcus Catarrhalis Meningitis.—The young man's meningitis was ascribed at first to his old malaria. Even after discovery of *Micrococcus catarrhalis* in the spinal fluid, its causal connection with the meningitis was doubted. A staggering gait was noted for a time after recovery was otherwise complete. The main reliance in treatment was on quinin and hexamethylenamin.

Infantile Mortality in Peru.—Eyzaguirre's statistics show that at Lima 19.85 per cent. of the children born die before they are a year old. The corresponding figure in Buenos Aires is given at 8.66; in New York (1917) 8.87; in Rome, 12.22; in Callao, 30.76, and in Bombay, 40.97 per cent. He outlines the measures necessary to combat this high infant mortality.

Archivos Españoles de Pediatría, Madrid

September, 1921, **5**, No. 9

*Treatment of Ascites in Children. M. Vásquez Lefort.—p. 513. Cone'n. System for Medical Inspection of Schools. C. Sáinz de los Terreros et al.—p. 528.
*Ipecac in Treatment of Constipation in Infants. J. García del Diestro.—p. 549.

Tuberculous Peritonitis in Children.—The previous instalments of Vásquez' study of this subject were summarized on page 1929. He recapitulates the whole in his appeal to beware of draining the ascitic fluid in such a way as to deprive the organism of the antibodies contained in it. The ascites should be combated by stimulating the emunctories to the utmost, and not by tapping. The curative action of the defensive elements in the ascitic fluid should be utilized further by reinjecting it subcutaneously, as a form of autoplasmotherapy. This seems most effectual in tuberculous peritonitis. The disappearance of the ascites under its influence should be regarded as testifying to the cure of the causal disease.

Ipecac in Treatment of Constipation in Infants.—García endorses the cholagogue and stimulating action of tincture of ipecac on the functioning of the digestive tract. It is especially useful when nothing can be found to explain the gastrointestinal derangement. It is in this rebellious "idiopathic constipation" that this treatment seems to restore conditions permanently to normal. The tincture of ipecac can be given, 6 to 10 drops a day, to infants less than a year old, fractioned in two or three doses, or it may be given 1 or 2 drops at a time ten or fifteen minutes before feeding. He assures that ipecac in this way is harmless, and does not cause nausea or vomiting.

Archiv für Kinderheilkunde, Stuttgart

Oct. 29, 1921, **70**, No. 2

*Basal Metabolism in Children. W. Klein, E. Müller and M. Steuber.—p. 81.
*Hot Baths as Test of Constitution. A. Meyerstein.—p. 88.
Importance of Tuberculosis Reinfection. T. Köffler.—p. 95.
*Action of Narcotics on Respiration. A. Eckstein and E. Rominger.—p. 102.
Case of Diphtheria Glandis Penis in Boy of Six. P. Bode.—p. 112.
*Suspension Stability of Erythrocytes in Children. Martha Bardach.—p. 114.

Basal Metabolism of Energy in Children.—The extremely carefully planned tests were made on two 8 year old boys who had been prepared by a light diet, and nothing but a little fluid for the nine preceding hours. They had also taken a long walk to insure sound sleep for the ten hours of the tests. Two nights a week were devoted to it, a total of eight in all, and the two boys kept each other company throughout. The average figure of the entire series was 1033.8, utilizing the Meeh formula; it was 1123.9 cal. with the Lissauer, per square meter of surface, and 44.52 cal. per kilogram of body weight. The writers regard the results thus obtained from two subjects, repeatedly examined, as more instructive than from a larger number examined only a few times. The work was done in the pneumatic cabinet of the Agricultural College at Berlin.

Hot Baths as Test of the Constitution.—Meyerstein noted the effect on twenty-nine children of hot baths, the temperature of the water 35 C. at first, and in two minutes raised to 40 the first day; to 41 the second, and to 42 (104 F.) on the following days. A total of 245 ten minute baths was thus studied. The age did not seem to modify the reaction. The temperature of most of the infants ran up rapidly and rapidly subsided afterward, confirming the prompt response to external heat, which is important in estimating the effect of hot weather on infants. The capillaries are evidently responsible for the reaction, and in some of the cases the skin grew pale instead of red. One 7 or 8 months babe had been given artificial heliotherapy before the bath, and after the bath had tonic-clonic spasms, with loss of pupil and tendon reflexes, the fontanels bulging, and the heart beat intensely accelerated. Under chloral, the spasms subsided in twenty minutes, but this case emphasizes anew the decisive rôle of the capillaries in the skin in the heat phenomena of infants.

Tests of Narcotics.—This is the third communication on the physiology and pathology of the respiration in children. The modification of the respiration in sleeping infants was utilized as a gage of the action of the different hypnotics tested. The respiration rate and volume and regularity is a sensitive index of the toxic action of the drug on the vital centers in the medulla, observed in connection with the depth of the sleep.

Suspension Stability of the Erythrocytes in Children.—Bardach found acceleration of sedimentation in certain diseases, and that the sedimentation on the whole seems to be more active in children than in adults.

Archiv für klinische Chirurgie, Berlin

Sept. 3, 1921, **116**, No. 3

*Operative Treatment of Surgical Tuberculosis. Fritz König.—p. 371.
*Operation for Acute Cholecystitis. O. Nordmann.—p. 388.
*Centripetal Massage of Scars. A. Szenes.—p. 398.
*Open Pneumothorax. J. Amreich and R. Spermann.—p. 413.
Local Infection of Hand with Foot-and-Mouth Disease. Israel—p. 453.
*Loose Bodies in Joints. L. Buchner and H. Rieger.—p. 460.
*Influence of Hypertonic Solutions on Absorption by Peritoneum. M. Reschke.—p. 466.

*Action of Roentgen Rays on Brain Tissue. H. Brunner.—p. 489.
Biology of Greater Omentum. E. Seifert.—p. 510.
Resection of Duodenal Ulcer. E. Nowak.—p. 518.
Pregl's Iodin Solution. E. Streissler.—p. 542.

Surgical Tuberculosis.—König tabulates the outcome in 1,932 operative cases of joint tuberculosis, with permanent recovery in 1,329, and discusses the indications for operative measures.

Acute Cholecystitis.—Nordmann analyzes his 134 cases of this kind, his conclusion being an appeal to internists to refer gallstone patients to the surgeon in the acute stage, before irreparable damage has been done.

Centripetal Massage of Scars.—The aim is to loosen up the scar from the bone or soft parts beneath, and Szenes' illustrated description shows how this can be best accomplished. It requires medical knowledge, skill and patience, and hence can be done successfully only by the physician.

Open Pneumothorax.—The condition directly after a gunshot wound is meant, and the proper treatment is outlined for this menacing condition.

Loose Bodies in Joints.—Arguments are presented against the assumption that trauma can induce the formation of a loose body in a joint. Occlusion of a vessel by fat embolism explains them more plausibly.

Influence of Hypertonic Solutions on Absorption by the Peritoneum.—Reschke's experimental research has confirmed the advantages of injection into the peritoneum of a hypertonic sugar solution as reducing absorption by the peritoneum. As the absorption of bacteria and toxins is a grave danger in peritonitis, by checking absorption in this way, we must aid materially the effect of our other measures. He injected salt and sugar in substance to make the tests as severe as possible.

Influence of the Roentgen Rays on the Brain.—Brunner announces that the mature glia cells of the animal brain seem to be very little affected by roentgen rays. When stimulated to reparative proliferation, they continue this unmodified by even intensive irradiation. The connective tissue cells of the pia display the same behavior.

Medizinische Klinik, Berlin

Sept. 25, 1921, **17**, No. 39

*Growing Old. H. Siegmund.—p. 1163.
Notification of Tuberculosis. A. Winkler.—p. 1166.
*Pathogenesis of Itching Skin Disease. E. Pulay.—p. 1169.
Lymphogranuloma of Eleven Years' Standing. O. Schiffner.—p. 1170.
Recklinghausen's Disease of the Bones. H. Flöcken.—p. 1171.
Biologic Action of Silversalvarsan. Karczag and Hetényi.—p. 1172.
*Whooping Cough in Adults. R. Neurath.—p. 1173.
A Village Cancer Focus. E. Sachs.—p. 1173.
Spirochetes in Healed Plaques in Mouth. A. Scheele.—p. 1176.
Ear Disease from Practitioner's Standpoint. Grahe.—p. 1178. Cont'n.

Growing Old.—Siegmund lists atrophy and pigmentation as the main changes in the physiologic growing old process. The pigmentation he ascribes to defective elimination of waste, and its secondary damage of the cell. The most noticeable changes from growing old occur in the connective tissue, which becomes less porous for the tissue fluids. This impedes both the supply of nourishment and the casting off of waste products. Steinach's operation merely "rejuvenates" the ageing puberty gland by a transient piling up of the protein and fat substances accumulating from the destruction of the generative cells. These carry the specific internal secretion. The effect therefore is merely a temporary stimulation of the sexual function in consequence of the sudden and exaggerated resorption of this internal secretion. No proof has ever yet been advanced that the atrophy and pigmentation of growing old is a reversible process, either in whole or in part.

Pathogenesis of Itching Skin Diseases.—Pulay argues that prurigo, strophulus and urticaria are the result of action of electrolytes in the tissues. They can all be grouped as the pruritus of children. Among the arguments presented is the finding of intense uricacidemia in a child with both prurigo and urticaria.

Whooping Cough in Adults.—Neurath thinks that whooping cough occurs more often in adults than we realize. The inclination to cough meets with such exercise of will power in adults that the tendency to the spasmodic cough is unconsciously repressed below the characteristic type.

Medizinische Klinik, Berlin

Oct. 2, 1921, **17**, No. 40

*Urine Production in the Elderly. E. Zak.—p. 1193.
*Influence of Diseases on Each Other. J. Löwy.—p. 1195. Conc'n No. 42, p. 1259.
Anacidity with Syphilitic Gastric Ulcer. F. Glaser.—p. 1199.
Eosinophilia with Quincke's Edema. M. Gänsslen.—p. 1202.
*Hemoclasic Crisis Test of Liver Functioning. E. Sömjén.—p. 1203.
*Import of Hemolysins in Spinal Fluid. F. Schleissner.—p. 1206.
Ear Disease from Practitioner's Standpoint. Grahe.—p. 1207. Cont'n.

The Urinary Function in the Aged.—Among the points brought out by Zak is the undependability of the axilla temperature in the aged. The poor circulation in the skin may reduce the axilla temperature much below the actual temperature of the body. Another is that the glycosuria in elderly diabetics may subside from the kidneys becoming less permeable. This is not a turn for the better but exactly the reverse. When the night urine surpasses considerably in amount the day urine, this points to weakness of the heart, and digitalis may be required, or dieting and restriction of the intake of fluids. Urobilinogen in the freshly voided urine may explain stomach disturbances as due to stasis in the liver, and enable their cure under digitalis and caffein, when otherwise cancer may be assumed. In the water test of the kidneys, the response is more instructive when only 500 c.c. of water is ingested than when more is taken. In the normal, 200 c.c. can be voided in the first hour, and the whole in three or four hours.

Influence of One Disease on Another.—Löwy remarks that the chief danger is from the fever, when an intercurrent disease develops in a diabetic. He cites some fatal cases of pneumonia or typhoid in diabetics, and says that the tendency to complications is particularly great when gout and diabetes are associated. He cites Fitz' case in which myeloid leukemia and diabetes were associated, and each improved under the usual treatment. In Rehitzer's case, necropsy confirmed the lymphatic leukemia and chronic nephritis, after death in diabetic coma. In Umber's case the diabetic woman had 9 per cent. sugar and megalosplenic polycythemia, with 150 per cent. hemoglobin. In a case of tuberculosis in a diabetic, there were no night sweats, very little expectoration and fever, while the glycosuria, polyuria and hyperglycemia entirely disappeared. The tuberculosis seems to transform the diabetic organism so that the clinical symptoms of diabetes subside. This may occur with granular atrophy of the kidneys, amounting to a cure of the diabetes. He quotes further several instances of a leukemic blood picture developing when the unstable balance of the bone marrow is upset by any toxic-infectious irritation. In actual leukemia, the blood picture may change to normal in the course of an infectious disease, but this is no sign of general improvement but rather the reverse. Pernicious anemia may be speeded up to a fatal termination by an intercurrent disease, or it may become transformed into an ordinary, secondary anemia type.

The Hemoclasic Crisis as Test of Liver Functioning.—Sömjén applied Widal's test ingestion of 200 gm. of milk to eighty-two persons, and thus confirmed the specific connection between the positive reaction and the liver. When leukopenia or leukocytosis is observed, twenty minutes after sipping the milk, this tells the story, the leukopenia or hemoclasic crisis, as he calls it, testifying to inability of the liver to retain and modify the proteins brought to it by the portal vein. The leukocytes may drop by 20 to 60 per cent. but this leukopenia does not parallel the severity of the liver changes. For diabetes, the test is made with 20 gm. glucose.

Hemolysins in Spinal Fluid in Meningitis.—Schleissner has found the presence of hemolysins in the lumbar puncture fluid a reliable index not only of the presence of purulent and cerebrospinal meningitis but of the trend toward recovery or aggravation. Before the clinical manifestations showed any improvement, the reduction in the proportion of hemolysins enabled a more favorable prognosis, and this was confirmed by the course. On the other hand, the negative findings with serous meningitis and with convulsions from spasmophilia were always dependable, as also in hydrocephalus, chorea, epilepsy and spastic diplegia. He urges greater use of this Weil-Kafka method by pediatrists; all that is necessary is to add 0.5 c.c. of the sheep blood solution to

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5 c.c. of the cerebrospinal fluid. The hemolysins normally in human blood do not get into the spinal fluid in normal conditions.

Monatsschrift f. Geb. u. Gynäkologie, Berlin

September, 1921, **55**, No. 4-5

*Fate of Fetus with Hydramnion. G. Krahula.—p. 199.
*Fate of Cesarean Section Children. H. Dencker.—p. 207.
Partial Antigens. F. Kirstein.—p. 218.
*Genital Prolapse During Delivery. F. Hannak.—p. 233.
Radiotherapy Versus Operation. P. Haendly.—p. 239.
Treatment of Chronic Gonorrhea in the Female. O. Feis.—p. 246.
Tuberculous Infection of Ovarian Tumors. E. E. Pribram.—p. 256.
Artificial Vagina Made from Intestine. H. Futh.—p. 262.
Atypical Delivery with Narrow Pelvis. C. Oertel.—p. 266.
The Question of Medical Certificates for Marriage. F. Heinsius.—p. 274.

Prospects with Hydramnion for the Child.—Krahula tabulates the details of 291 cases of hydramnion compiled from the Bonn clinics and the literature. In the Bonn clinics, 37.5 per cent. of the 41 children were deformed and 54.13 were still-born or soon died. Only 3.78 per cent. of the total children were born viable and left the maternity, while only 1.03 per cent. were normal. With acute hydramnion, a viable child cannot be anticipated. The fact of a twin gestation does not modify the prognosis; some of the normal children were twins.

Fate of Cesarean Section Children.—Dencker has traced 236 viable children delivered at the Breslau clinic by cesarean section since 1909. Eight of them gave the normal cry at once, and 148 were in asphyxia. The mortality in the first month of life was 6 per cent. but 95.4 per cent. left the hospital in good condition, and 81.5 per cent. were living at the end of the year, and since then have averaged well. In fact, they average better than other children as the cesarean children are often exceptionally cherished as coming to parents who had almost given up hope of offspring.

Prolapse of Uterus and Vagina During Delivery.—Hannak remarks that the child is in unusual danger when prolapse occurs. He reports five cases and one in which total inversion of the vagina occurred seventeen days before delivery, but the latter proceeded normally. Four of the women died, and the child of the fifth required perforation.

Monatsschrift für Kinderheilkunde, Berlin

July, 1921, **21**, No. 4

*Creatin Metabolism and the Thyroid Gland. C. Iseke.—p. 337.
Adhesive Pericarditis in Early Childhood. E. Reuter.—p. 350.
*Disturbances of Growth in Children with Diabetes Insipidus. Gayler. —p. 356.
*Stomatitis as Complication in Dysentery. N. Kundratitz.—p. 366.
*Typhoid Fever in Infants. W. Larsson.—p. 373.

Creatin Metabolism and the Thyroid Gland.—Iseke concludes, from a series of investigations, that hyperfunctioning of the thyroid gland causes an increased creatin metabolism, and a hypofunctioning of the gland a lowering of the creatin output. In children up to 13, creatin, which occurs physiologically in the urine, is diminished in myxedema. This may serve as an early and differential sign by which athyreosis may be diagnosed. In exophthalmic goiter we find a high creatin content; also in fevers, toxicoses, retrogressive muscular changes and severe diabetes excessively high creatin values appear. The excretion of creatin in the urine of children reaches its apex at about the fourth month. Then it gradually decreases and disappears from the urine at the age of 12 to 14. By noting the effect on creatin values brought about by the administration of thyroid extracts or preparations, we have an excellent means of judging their quality.

Disturbances of Growth in a Child with Diabetes Insipidus.—In a child of 12 who for nine years had been suffering from diabetes insipidus and who was in the habit of drinking 5 liters of liquids daily, Gayler conducted metabolism experiments to discover whether the assumption was justifiable that the large quantities of liquids ingested washed away nutrient elements, thereby bringing about retardation of growth, which in this case (and very commonly in such cases) was an accompaniment of diabetes insipidus. He found that the excessive fluid intake was responsible for a marked elimination of nitrogen and large loss of calcium, which he considers substantial evidence in confirmation of the said assumption with respect to the cause of the retardation of growth in diabetes insipidus in childhood.

Stomatitis Ulcerosa Cachectica as a Complication in Bacillary Dysentery.—Kundratitz describes two cases of severe stomatitis, resulting in necrosis of the bone, as a complication of bacillary dysentery not previously described in the literature. He thinks this disease process may possibly be classed with the group of gangrenous inflammations to which both Matzenauer and Rona assign noma and hospital gangrene.

Clinical Aspects of Typhoid Fever in Infancy.—Larsson states that the prognosis of typhoid in infants is, as a rule, more favorable than in adults and older children. Diagnostically it must be differentiated from dysentery, paratyphoid, the various types of meningitis, and alimentary toxicosis. Treatment may be confined to tepid baths to combat the fever and the application of the ordinary rules of infant feeding, of especial importance being the (if necessary, forcible) ingestion of liquids in case the water balance has been much reduced. If food is refused, feeding by sound may be resorted to without hesitation.

Münchener medizinische Wochenschrift, Munich

Sept. 16, 1921, **68**, No. 37

Tuberculosis in Relation to Pregnancy. E. Kehrer.—p. 1171.
*Tuberculous Infection in the Family. T. Köffler.—p. 1172.
*Latency of Sensations in Hyperalgesic Areas. F. Kauffmann.—p. 1174.
Surface Tension as a Physiologic and Clinical Gage. Kisch.—p. 1178.
An Improved Method of Ophthalmoscopic Examination of Certain Fundus Changes. O. Haab.—p. 1179.
Roentgen-Ray Dosage from Biologic Standpoint. Holzknecht.—p. 1180.
Roentgenographic Examination in Ileus. H. Kloiber.—p. 1181.
Evidence that Gonorrhea in Women is Curable. L. Zill.—p. 1183.
Advantages of Electric Bath in Disturbances of Circulation. L. Raab. —p. 1186.
Protective Measures in Roentgen Ray Laboratory. A. Lorey.—p. 1187.
Acute Respiratory Disturbances in Tabes Dorsalis. Pette.—p. 1188.
A Life Saving Operation on Prevertebral Tuberculous Abscess in the Posterior Mediastinum. G. Riedel.—p. 1190.
Operation for Extensive Rectal Prolapse. Eschenbach.—p. 1192.
Treatment for Head Lice. A. Hase.—p. 1193.
Pumice Pencils for Granulosis. Schmidt.—p. 1197.
D'Espine's Sign of Bronchial Tuberculosis in Children. Klare.—p. 1197.
General Diagnosis of Hip Joint Disease. J. Wieting.—p. 1198.

Observations on Tuberculosis Infection in the Family.—Köffler reports the results of his investigations to discover the extent to which members of families in which tuberculosis is present become infected. He reaches these conclusions: 1. A patient expectorating tubercle bacilli in large quantities will infect all the children in the family, but infants under 1 year of age often show no reaction in spite of every opportunity to become infected. 2. Tuberculous patients whose sputum contains only small quantities of bacilli are much less infectious for the other members of the family. 3. Patients who eliminate no bacilli are not infectious. 4. Bacillus-negative patients with grave clinical pulmonary tuberculosis, profuse, occasionally bloody expectoration are to be regarded as "facultative open" cases, and are exceedingly dangerous to children. 5. Young children over 1 year old are sure to become eventually infected if there is abundant and long-continued opportunity for infection. Such children often are taken ill following the first infection and present a high mortality. 6. Young children in contact with patients with rare and slight bacillus findings do not show such a great tendency to become infected. 7. Children past 2 years of age, though abundant opportunity is given, become infected much more rarely and their mortality is correspondingly less. 8. Children of patients who eliminate large quantities of bacilli are, on account of constant reinfection, highly sensitive to tuberculin and in a condition of continual sensitization.

Latent Interval in Pain Sensations in Hyperalgesic Areas.—Kauffmann discusses the various methods in use for testing the sensitiveness to pain of different areas of the body, and recommends a method which he has found superior to the common test by pinching a fold of the skin. He fills a test tube with hot water and inserts a thermometer, so that the temperature of the water may be read at any time. He found a temperature of from 50-75 C. the most favorable for comparative tests. The base of the test tube, which is flat, is allowed to rest without pressure on the part to be examined. The surface of the base is about 1.5 sq. cm. With a stop watch he measures the time that elapses between the applica-

tion of the irritant and the first sensation of pain. The measure for the sensitiveness of a given skin area is the latent interval before the pain sensation.

Therapeutische Halbmonatshefte, Berlin

June 15, 1921, **35**, No. 12

Silver Therapy. A. Böttner.—p. 353.
Respiratory Disturbances in Children and Their Treatment. E. Rominger.—p. 367.
Clinical Aspects of Arsphenamin Exanthems. L. Kleeberg.—p. 370.

July 1, 1921, **35**, No. 13

New Derivatives of Quinin. A. Heffter.—p. 385.
Blood of Relatives for Transfusion. M. Bürger.—p. 386. Cont'd.
*Surgical Treatment of Hypertrophied Prostate. W. Karo.—p. 393.
Regulation of Diet and Medication in the Treatment of Kidney Disease. G. Stroomann.—p. 401.
Treatment of Pointed Condylomas. B. Zelnik.—p. 407.

Surgical Treatment of Hypertrophy of the Prostate.—In 57 cases Karo operated by the suprapubic route. Of the 57 patients, 38 had aseptic urine, and of these, although many patients were over 70 years old, he lost only one—a man of 79—through embolism. The other 19 cases were already infected before the operation, and of these patients 8 died (nearly 50 per cent.). He therefore emphasizes strongly that patients should not be operated on until the infection has been combated by preliminary treatment. The best means of combating urosepsis is the retention catheter. It is thus often possible to counteract septic infection of the urinary passages in a surprisingly short time. The effect of the retention catheter should be supplemented by systematic lavage of the bladder with a boric acid or nitrate of silver solution. Also rectal enemas with sodium chlorid solution are beneficial. Sometimes it is well to alternate these with a 4 per cent. solution of glucose, to which a few drops of epinephrin may be added. A cleansing soapsuds enema should precede the use of sodium chlorid enemas, which may be given daily (from ½ to ¾ liter). Furthermore, by suitable internal medication, we may endeavor to effect a sterilization of the urinary tract. Through frequent tests of kidney function the improvement should be controlled, so that the opportune time for the operation may not be overlooked.

Zeitschrift für Tuberkulose, Leipzig

October, 1921, **34**, No. 7

*The Transactions in Full of the German Tuberculosis Congress, May 19, 1921, pp. 535 to 742.

Tuberculosis Congress.—Several of the twenty-six addresses and long papers read at this congress and all here reproduced have already been summarized elsewhere, in particular Wassermann's and Neufeld's addresses on immunity, reviewed on page 1852 and on page 1669.

Surgical Treatment of Pulmonary Tuberculosis in Children.—Brauer discussed the surgical treatment of pulmonary tuberculosis in children, saying that this can scarcely be anything but the artificial pneumothorax, and that all the points of view from which this procedure is regarded for adults are the same for children. There is of course the question what will become of the lung thus compressed, and whether the benefit realized will stand the strain of puberty. In considering the indications for it in children, the tendency to generalization, the predominance of the hilus processes, and the various forms of hepatization of the lung have to be borne in mind. Hepatization does not respond well to collapse therapy. Only when the hilus process has spread to involve extensive areas of lung tissue, is there any prospect of benefit from the pneumothorax; when this is the case, it may render great service. Thoracoplastic operations now accomplish the desired purpose quite effectually, but the pediatrist may well query the outcome later of such an operation on a child. A few scattered observations seem to show that even in a child a plastic operation with correct technic may provide more favorable conditions for the later growth of the thorax. Years of research will be required before we can estimate the ultimate outcome of surgical measures on children.

Surgical Treatment of Pulmonary Tuberculosis.—Only the conclusions of Sauerbruch's address are given. These are to the effect that unilateral chronic fibrous pulmonary tuberculosis, with cavities, has been cured by operative measures, restoring earning capacity and the joy of life. These cures have been realized not only in the well to do but in many of the poor. This operative treatment extinguishes the source for the contagion of others, and hence it should be regarded as a cardinal measure in the campaign against tuberculosis to have surgical treatment of pulmonary tuberculosis perfected and applied on an extensive scale.

Tuberculosis and Pregnancy.—Petruschky is the advocate of percutaneous tuberculin treatment for the tuberculous at any age, and also in prophylaxis. He relates that with this specific treatment of pregnant women, the children are born free from tuberculosis and grow up strong, and if they acquire tuberculosis later, it is readily curable. Unfortunately, he adds, gynecologists have paid no heed to his announcements along this line in 1904 and 1911. Kehrer's communication was devoted to the indications and methods for interrupting a pregnancy in the tuberculous. He said that there was no activation of the disease during pregnancy in fully 90 per cent. and during the pregnancy and puerperium in 80 per cent. of the latent cases of pulmonary tuberculosis. When the tuberculosis first becomes manifest during a pregnancy, if in the Turban phase I, the physician has a grave responsibility but expectant treatment is indicated. In phase II there is aggravation in 80 per cent. Improvement follows interrupting the pregnancy in 80 to 90 per cent. of these cases, and the best method is abdominal panhysterectomy under sacral anesthesia. In phase III little is to be gained by total extirpation or sanatorium treatment, which, on the other hand, is especially beneficial for the pregnant in phases I and II.

Zentralblatt für Chirurgie, Leipzig

Sept. 17, 1921, **48**, No. 37

*Cholangiolitis in Relation to Operations for Gallstone. P. Poppert.—p. 1342.
Sigmoido-Anastomosis. C. Pochhammer.—p. 1343.
Suprarenalectomy in Epilepsy. O. Specht.—p. 1347.
Sauerbruch's Tunnel Method to Replace Sphincter Activity in Artificial Anus. H. Hans.—p. 1348.

Cholangiolitis in Relation to Pain Following Operations for Gallstone.—Poppert says that his clinical observations lead him to believe that the colicky pains that frequently occur after operations on the bile tracts cannot be due solely to adhesions, but that an infectious cholangitis or cholangiolitis plays a part. These cholangitic processes are the regular accompaniments of manifest cholelithiasis. If at the time of operation an infectious cholangiolitis is present, recurrences of pain must be expected in spite of cystectomy. Recently, bacteriologic evidence for the correctness of the assumption as to the cause of the recurrence of colic has been secured.

Zentralblatt für Gynäkologie, Leipzig

Sept. 3, 1921, **45**, No. 35

Hundred Births Under Scopolamin Amnesin Anesthesia. Meyer.—p. 1237.
Cervicovaginal Fistula from Criminal Abortion. E. Kosminski.—p. 1243.
"Skin Sutures." Comment. H. Hellendall.—p. 1245.
*War Amenorrhea in Petrograd. L. v. Lingen.—p. 1247.
*Operative Treatment of Ovarian Cysts. Schäfer.—p. 1248.

War Amenorrhea in Petrograd.—Von Lingen discusses the bad food and labor conditions in Petrograd, during the war, which resulted in many cases of amenorrhea extending over from four or eight months to two years. He observed personally 320 cases. Hunger edema, while very common in Petrograd, was seldom noted in his amenorrhea cases, most of which concerned married women. Nulliparas, primiparas and multiparas were all affected alike. There were no further phenomena noted, ascribable to the interruption of the menses; no hypoplasia of the uterus resulted therefrom.

Operative Treatment of Ovarian Cysts After the Manner of Klapp's Hydrocele Operation.—Schäfer not wishing to sacrifice the left ovary of a 25 year old nullipara, notwithstanding the presence of a retention cyst, since he had removed the right ovary one year previously for a similar cause, decided to operate after the method proposed by Klapp for hydrocele in men, shown in the illustration in the article. The cyst was split in two and part of it was removed, but a narrow free-hanging edge of the cyst was left. This was folded back on itself and sutured with small catgut sutures

to the healthy ovarian tissue. The bright red ground of the cyst was thus exposed and presented a somewhat "pickled" *(sulzig)* appearance. Recovery was uneventful. Menstruation has since been normal. Six months later the patient was married, and six months later still an abortion in the third month occurred. Seven months afterward he operated for mobile retroflexion of the uterus, and found incidentally that the left ovary was normal in size, color and shape, and free from adhesions with neighboring organs. Of the suture in the edge that was turned back no trace could be discovered. The former site of the cyst could no longer be established. Since retention cysts must be regarded as the product of inflammation of the follicle, it must be assumed that their inner surface is in an inflamed, irritated condition. He therefore expected to find adhesions between the remnant of the cyst and the surrounding structures. He counted only on a functioning of the ovarian remnant in the form of an internal secretion, and had not expected that conception would occur.

Zentralblatt für innere Medizin, Leipzig

Sept. 10, 1921, **42**, No. 36

Changes in Blood Sugar in Poisonings. J. Löwy.—p. 713.

Sept. 17, 1921, **42**, No. 37

Peculiar Type of Dyspnea in Diabetes. K. Pichler.—p. 729.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

Aug. 13, 1921, **2**, No. 7

*Joint Disturbances in Syringomyelia. R. A. Koopmans.—p. 822.
*Congenital Lymphosarcoma in Posterior Mediastinum. C. de Lange and W. T. van Goor.—p. 828.
*Gastric Cancer After 70. E. H. B. van Lier.—p. 837.
Anatomy of the Femoral Canal. G. C. Heringa.—p. 841.
*Treatment of Refractory Malaria. J. L. A. Peutz.—p. 854.
*Tests for Sugar in Blood. D. G. Cohen Tervaert.—p. 857. Idem. A. Foyer.—p. 866.
Epidemic Encephalitis. J. M. A. M. van den Bergh.—p. 865.

Joint Disturbances in Syringomyelia.—Koopmans warns that arthritis deformans, especially in the young, should always suggest the possibility of syringomyelia. It is more probable when there is a destructive process or dislocation within or near the joint. The arthropathy may develop early in syringomyelia, sometimes preceding all other appreciable manifestations of the disease. Recurring dislocation of the shoulder is usually due to syringomyelia. The degeneration of the trophic and vasomotor nerves interferes with the nourishment of the joint. He describes three cases in men between 18 and 43. In the youngest and the oldest men the first sign of trouble had been cracking sounds in one shoulder, and the joint swelled and function was impeded. There was no history of trauma. The lower ends of the radius and ulna were enlarged, and the hands were swollen, but the wrist seemed normal. Roentgenoscopy confirmed the spontaneous fracture of the humerus at the epiphysis. This healed in a month but spontaneous fracture occurred a second time in the region three months later. In the second case the shoulder disturbances had been ascribed to tuberculosis but the constantly sterile puncture fluid and signs of syringomyelia, considered by the light of the first case, soon corrected the diagnosis. In the third case the elbow was the region involved. The loss of sensation exposes the bones and skin to trauma, and the hand and arm of all three showed numerous traces of cuts and burns. Treatment can be only conservative, rest and massage, but the prognosis as far as function of the joint is concerned is relatively favorable.

Congenital Lymphosarcoma.—The child died when 8 weeks old, and the tumor in the left posterior mediastinum measured 2.4 by 5.6 and 6.7 cm. There was metastasis in the liver, and the Achilles reflex could be elicited in the child, but not the knee-jerk. In fifty other infants tested, the Achilles reflex could be elicited in 3.

Gastric Cancer in the Elderly.—Van Lier protests against the pessimistic view that cancer of the stomach should be assumed when a person approaching or past 70 has severe stomach disturbance and blood in the vomit. He asserts emphatically that the age of 60 or more testifies against cancer; also that the sudden aggravation of long persisting stomach disturbance is scarcely ever due to cancer. He also asserts with equal emphasis that elderly persons can stand a gastro-enterostomy much better than many suppose. In the last year and a half he has operated in seven cases of the kind in persons between 68 and 82, and all were cured by the gastro-enterostomy from long persisting stomach disturbances, with extreme retention. The acidity ranged from 60 to 113 in all but one, and this patient was the only one without blood in the vomit. The recent rapid aggravation of the stomach disturbances, with pain, loss of flesh and strength and vomiting of blood, had been ascribed to cancer, but the operation revealed in all a benign stenosis of the pylorus, with lumps of connective tissue, the recent aggravation due to further closing of the lumen. He insists that this benign stenosis of the pylorus is comparatively frequent after 60, and he reiterates that it is possible that certain persons, who have been allowed to die from supposed cancer, in reality might have been saved by a gastro-enterostomy if the benign nature of the stenosis had been recognized. He protests against the universal carelessness in examining persons in the seventies and eighties. As nothing can be done to remedy their advanced age, the physician is too apt to feel that an exact differential diagnosis is scarcely worth the trouble. He operated under local anesthesia in the two men of 80 and 82. The latter had suffered from his stomach since his student days, and the other for years and had had hematemesis. In all his seven cases, the stomach tube introduced after a twelve hour fast brought from 300 c.c. to 1 liter of watery fluid contents, usually with more or less blood in the coffee-ground form. As to malignant degeneration of an ulcer, this certainly does occur, and in the leg as well as in the stomach, but in both it is rare. On the other hand, stenosis of the pylorus ought to be given surgical treatment the same as an incarcerated hernia regardless of the age.

Rebellious Malaria.—Peutz reports a case of malaria in a man of 31 in which no apparent benefit was derived from quinin, methylene blue or neo-arsphenamin. The attacks seemed to grow more severe under all this treatment. Then he applied the roentgen rays to the spleen, and there were no further attacks after the first exposure. Four more were given, and the man has had no return of symptoms during the six months to date. The exposures were for three minutes, 2 milliamperes; 3 mm. filter, and 20 cm. distance.

Estimation of Sugar Content of the Blood.—Tervaert has been testing the latest technics for this purpose, and reports that the Shaffer and Hartmann and the Folin and Wu, Ponder and Howie methods are comparatively simple, while the first mentioned can be applied to minute amounts of blood. He commends them all as thoroughly dependable. Foyer compares a number of other technics, and states that as the erythrocytes seem to be impermeable to sugar, this should be taken into account in estimating the sugar content of the plasma in anemic diabetics.

Finska Läkaresällskapets Handlingar, Helsingfors

September-October, 1921, **63**, No. 9-10

*The Defensive Ferments Under Anesthetics, Etc. J. Grönberg.—p. 429.
*Acute Hematogenous Nephritis. B. Runeberg.—p. 473.
Hydrocele of Kidney in Form of Pararenal Cyst. A. Krogius.—p. 493.
Spiral Spring in Extension for Fracture. R. Fahlin.—p. 512.

Defensive Ferments in Blood Under General Anesthesia and Certain Intoxications.—Grönberg's extensive research on man and animals with Abderhalden's ninhydrin dialysis method was done in part at Abderhalden's Physiology Institute at Halle and partly at the Wiborg hospital. It has confirmed the reliability of the method, he says, and demonstrated that besides the clinical manifestations induced by ether, chloroform, phenol, barbital and compound solution of cresol these drugs and poisons have a toxic action on certain organs. With ether (11 surgical cases, 8 rabbits and 4 dogs), the serum gave negative findings beforehand, but during the general ether anesthesia, a positive reaction with brain tissue was obtained in 21 of 23 serums; with nerve substance in 10 of 20; with lung substance in 14 of 23. The intensity of the reaction was proportional to the duration of the narcosis. The action of the ether was evident in this respect up to the sixth to tenth day, and the serum of man and animals responded alike. With chloroform (11 clinical cases, 3 rabbits and 3 dogs) the corresponding figures were 14 with brain, 12 with nerve and

6 with lung tissue. In 5 cases of acute phenol, barbital or compound solution of cresol poisoning, reaction was positive in all for brain, nerve and liver tissue, and, with phenol and compound solution of cresol, for kidney tissue likewise. In 5 cases of morphin addiction and 6 of lead poisoning, all reacted to brain and nerve substance and most to liver also, and 4 of the morphin addicts to thyroid tissue. Control tests with normal subjects were constantly negative.

Acute Infectious Nephritis.—Runeberg emphasizes the importance of curing the primary streptococcus or staphylococcus infectious process responsible for the acute blood-borne kidney disease, or curing the tendency to constipation when the colon bacillus is responsible. He has very seldom tried rinsing out the kidney pelvis, but a retention ureter catheter has often rendered invaluable service, especially in pyelonephritis with retention. The benefit may be remarkable not only when pus but also when merely urine is thus evacuated, relieving the effect of the inflammatory paresis of the ureter, and thus acting on the lymphangitic process in the kidney parenchyma. His experience with vaccine therapy, especially with colon infection has not been large, but has not been encouraging. Surgical treatment is not required except with vital indications; colon bacillus processes in particular, although apparently alarming, are usually fundamentally benign. The vital indications are severe sepsis and anuria: decapsulation with bilateral disease; nephrectomy if only one kidney is involved. He resorted to nephrectomy only in 4 of his 250 cases, and as his experience increases, the proportion grows less except for large abscesses or similar embolic metastatic lesions, or paranephritic abscess. The latter calls for immediate intervention. His 24 cases have shown that simple evacuation is generally ample, without the necessity for exposing the kidney all around. When the suppurating process in the kidney has reached a chronic stage, there can be no question as to the advantage of nephrectomy, as no conservative measures can be effectual.

Hygiea, Stockholm

Oct. 16, 1921, **83**, No. 19

*Agglutination of Plague Bacilli. C. Kling and S. Hesser.—p. 625.

Agglutination of Plague Bacilli.—Kling and Hesser relate that plague bacilli from different localities may not be agglutinated alike, and the serums on the market are not always dependable. By immunizing rabbits with plague bacilli, killed by heat, they always were able to obtain a strongly agglutinating serum.

Oct. 31, 1921, **83**, No. 20

*Mercurial Tonsillitis. J. Almkvist.—p. 657.

Mercurial Sore Throat.—Almkvist found the mercurial angina alone in 15 of his 26 cases, but in 9 others it accompanied gingivitis or stomatitis, and in 2 there was merely salivation. He regards it as merely the casual localization in the throat of an ordinary mercurial stomatitis, but it is often mistaken for Vincent's angina. There was fever only in 2 of the cases. The angina persisted for from one to twenty-two days after the beginning of treatment. Both tonsils were involved in 9 instances. The angina developed as early as after the second injection of mercury in some cases; in others not until up to forty-eight days after the conclusion of the course. The infected tonsils afford a predisposition, and treatment to combat this infection is the main thing. It may not be necessary to suspend the mercury when this is done effectually. Arsphenamin by the vein may cure the angina promptly or may have little effect, its action varying widely. He tabulates his cases under nine headings for comparison.

Norsk Magazin for Lægevidenskaben, Christiania

November, 1921, **82**, No. 11

*Indirect Transfusion of Blood After Hemorrhage. F. Jervell.—p. 761.
*Transfusion of Blood for Melena Neonatorum. Idem.—p. 778.
Diabetic Coma with Insufficiency of the Kidneys. S. K. Mordre.—p. 783.
*Apparatus to Detect Color Blindness. S. Holth.—p. 789.
*Cancer After Corrosion from Ammonia. J. H. Berner.—p. 794.
Brain Tumor Clearly Shown by Roentgen Rays. V. Magnus.—p. 797.
*Etiology of Disseminated Sclerosis. V. Magnus.—p. 798.
*Progressive Gangrene, Syphilis and Diphtheria. J. A. Voss.—p. 802.
*Inversion of Plantar Reflex. Monrad-Krohn and Lossius.—p. 805.
Frontal Tumor Masquerading as Cerebellar. Monrad-Krohn.—p. 809.

Transfusion of Citrated Blood.—Jervell gives a table of the findings in 21 cases showing the color index of the blood, the number of corpuscles and the coagulation time, recorded almost day by day, for thirty-five days after severe hemorrhage, at childbirth or after withdrawal of 650 c.c. of blood. This afforded a basis to estimate the effect of transfusion of citrated blood in a parallel group of 10 cases. The ultimate outcome of the transfusion seems to depend on the length of survival of the blood corpuscles from the donor. In 3 of the cases they were refound in the blood a month or two after the transfusion. The danger of complications is far greater in grave chronic anemia than with acute hemorrhage, but the risk is much less by the indirect, citrated method, as this can be made as slow as desired.

Transfusion of Blood for Melena Neonatorum.—Jervell ascribes the recovery of the infant to transfusion of 100 c.c. of the mother's blood plus 50 c.c. of saline. Two and a half days after birth, the apparently healthy child began to have profuse hemorrhages from the bowels, true melena. The mother was 42, with 5,200,000 erythrocytes and color index of 70, but it belonged to a different group from the infant's blood, but the melena was arrested immediately, probably by the increase in the agglutinating power of the infant's blood which became manifest at once. Six weeks later the maternal corpuscles were found agglutinated into compact lumps while the infant's own erythrocytes were not agglutinated, and the child was thriving.

Apparatus to Test for Scotoma and Color Blindness.—Illustrated descriptions are given of Holth's "three-object color" bar and charts, and the application of the three-object principle to the jointed perimeter.

Posttraumatic Cancer.—Four months after the man of 55 had severely corroded the esophagus and stomach by drinking water of ammonia, necropsy revealed three cancerous tumors in the esophagus between the strictures and patches of necrosis caused by the action of the caustic. There were also two papillomatous tumors in the greater curvature of the stomach. One, 3 cm. from the cardia, was the size of a walnut, with a second smaller one near it. The multiple tumors all showed the same microscopic structure of adenocarcinomas. The stenosis and inadequate feeding through a stomach fistula evidently hastened the fatal outcome. Berner regards a causal connection between the trauma and the malignant disease as highly probable although unable to prove it.

Etiology of Disseminated Sclerosis.—Magnus injected guinea-pigs with blood from cases of disseminated sclerosis. The results were negative in his entire series, a total of twenty-three cases of multiple sclerosis, using forty-two guinea-pigs and seven rabbits. None of the animals developed paresis or sickness of any kind, except two that died with brain symptoms explained by a local process from the ear. Seven of the sclerosis patients had been treated with neo-arsphenamin at the time.

Progressive Gangrene, Syphilis and Diphtheria.—A small abscess on the leg of a previously supposedly healthy man of 60 developed in a month into an extensive tertiary syphilitic lesion, covering an area of nearly 800 sq. cm. Diphtheria bacilli had become installed in it, plus progressive gangrene. Under neo-arsphenamin and diphtheria antitoxin the cure was soon far advanced.

Inversion of the Plantar Reflex.—A man of 25 and a girl of 13, who had both had poliomyelitis, the former nine years, the other one month before date of writing, presented the response to the Babinski test assumed to be characteristic only of pyramidal disease. Almost isolated paralysis of the flexor muscles—a peripheral lesion—had induced this inversion of the normal reflex.

Ugeskrift for Læger, Copenhagen

Oct. 13, 1921, **83**, No. 41

Propyl Alcohol as Surgical Disinfectant and in Treatment of Skin Diseases. J. Christiansen.—p. 1319.
Comparison of Dietaries on Different Incomes in Denmark. P. Heiberg.—p. 1326.

Nov. 3, 1921, **83**, No. 44

Treatment of Bone and Joint Tuberculosis. R. Hertz.—p. 1431.
Collapse and Heart Disease in Diphtheria. E. Faber.—p. 1440.